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Spring 1996

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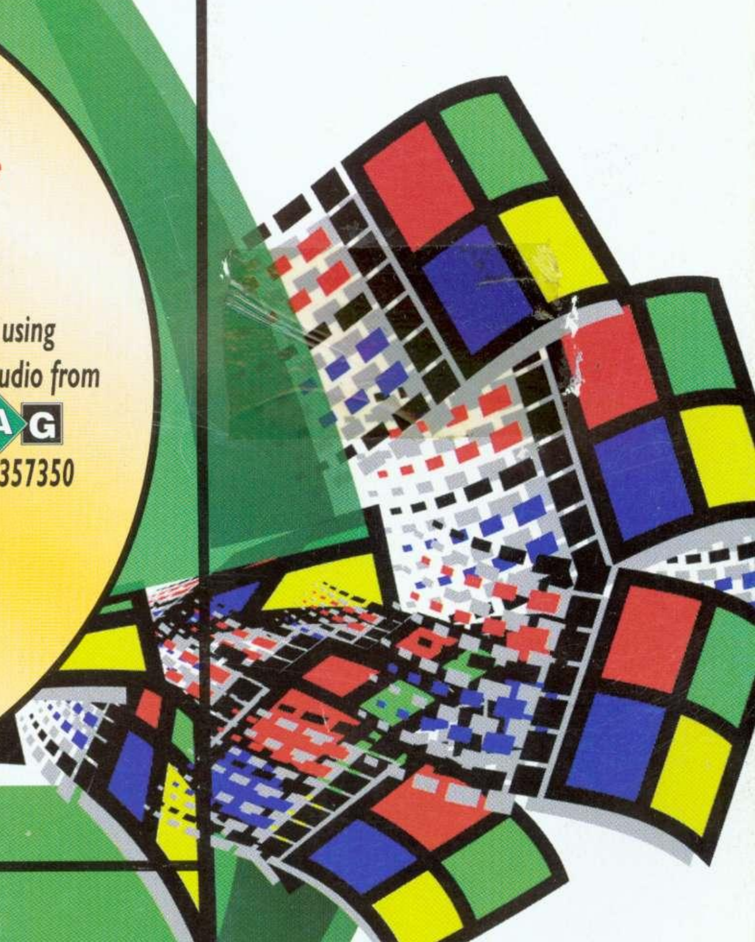
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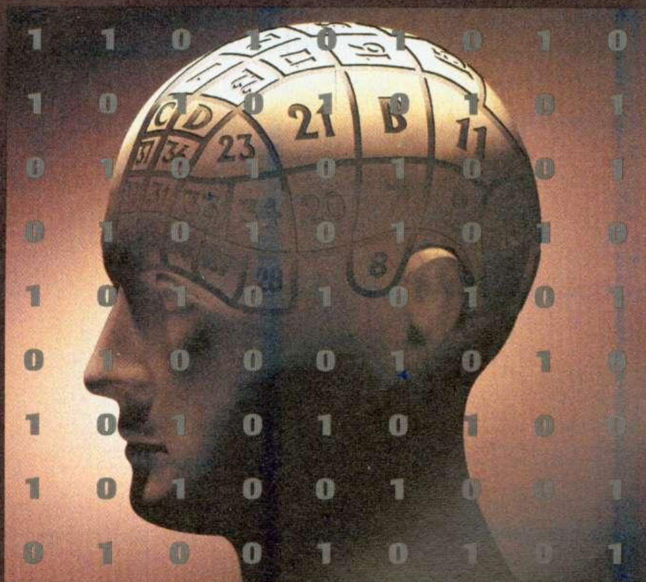
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Editor's letter

With the new CHRP standard being announced, hybrid multi-platform machines seem to be the order of the day and in this issue we consider a number of ways of achieving this, both with PC cards and with readers for foreign disc formats.

Mark Moxon – gone but not forgotten – gives us his report from Australia on using his Pocket Book and 3Fax to phone home. We also have a BETT preview; if you're coming to BETT do pop over to the stand and say hello. It's a long show and can get awfully dull at times.

David Matthewman

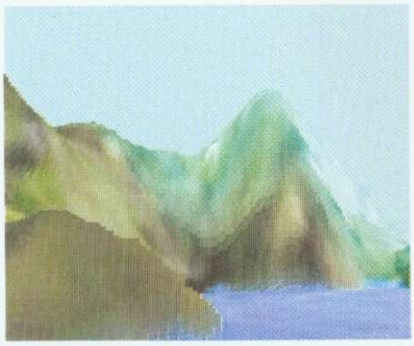
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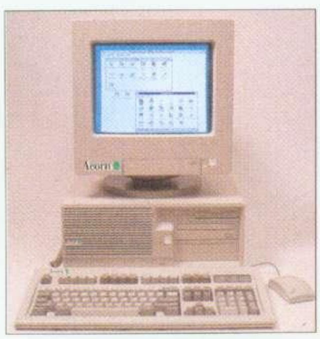
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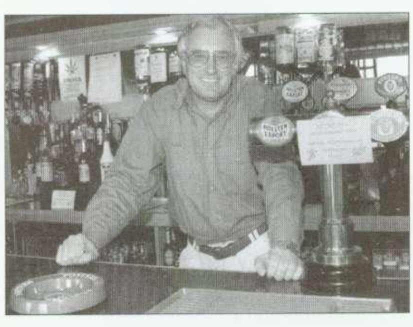
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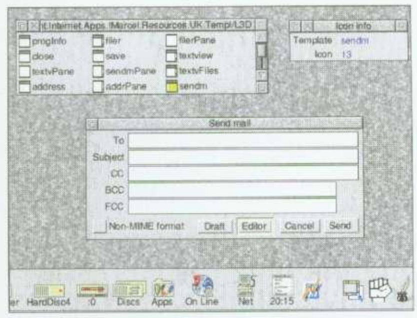
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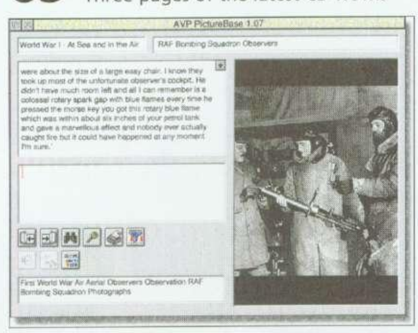


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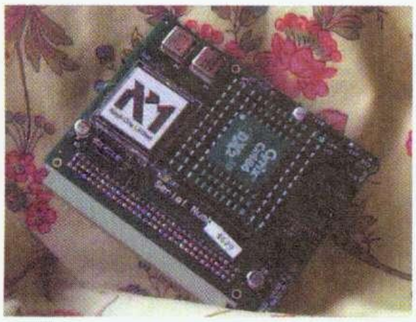


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January 1996

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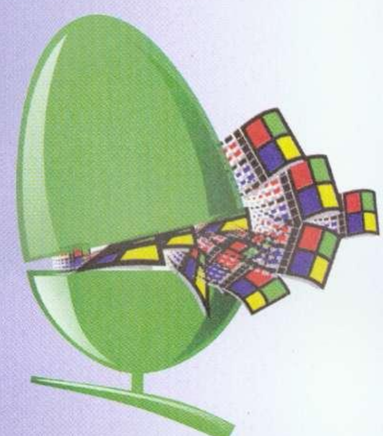
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Superb demo of the new 3D modelling package TopModel plus a free CD-ROM containing Acorn's Products and Services catalogue and over 60 commercial demos taking up over 350Mb of disc space.



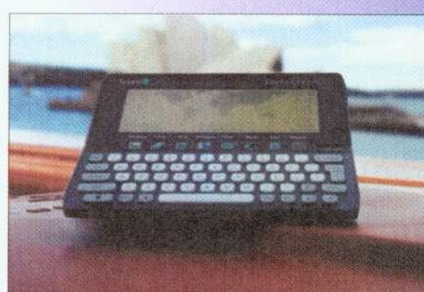


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We look at the solutions available for running PC software on your Acorn.

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Mark Moxon, ex-editor of *Acorn User*, shows how you can use a Pocket Book to communicate from the Antipodes



Next month in Acorn User

Clan issue

Acorn's Clan enthusiast scheme has been running for over a year now. We talk to Chris Cox about the scheme, and to some Clan members to find out what they've got from it. We'll have advice for existing members, and reasons to join for others.

Over Christmas, Sibelius 7 gained kudos by playing the theme to Little Red Riding Hood on the BBC. We talk to the composer of that piece, Paul Patterson, Professor of Music at the Royal Academy about using Sibelius 7.

We've also got a feature introducing the Internet for anyone baffled by the terms and etiquette, as well as a round up of word processors and DTP packages. Don't miss it.

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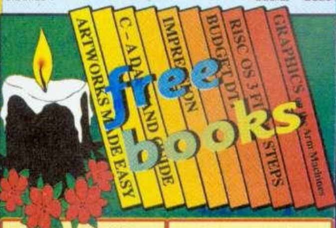
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Plantwise, age 9-14	Sherston	£42
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Rhapsody 3	Clares	£74
Rhythm-Bed	Clares	£38
Rick Dangerous	Hitmen	**£13**
RISC OS 3 First Steps	Dabs	V0£7
RISC OS 3 Programmer's Reference Manual vol 1-4	Acorn	V0£105
RISC OS 3 Programmer's Reference Manual vol 5	Acorn	V0£35
RISC OS 3.1 Documentation	Acorn	£28
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Bubble Jet BJC-600 Ink Cartridge, Black High Capacity	Canon	£12
Bubble Jet BJC-600 Ink Cartridge, Cyan	Canon	£10
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Bubble Jet BJC-4000 Ink Cartridge	Canon	£40
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ScanLight 256 for A3000/3010/3020/A4000	CC	£138
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Vision 24 A5000/400/300/Risc PC	HCCS	£67
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News

No Acorn PC at BETT?

ONE expected Acorn Education initiative may miss BETT – the new Acorn PC-compatible. It's possible that a prototype will be there, but Acorn is unlikely to have finalised its model line up or pricing at that time. Indeed, after the initial enthusiasm for at last being allowed to add PC-compatibles to the Acorn catalogue and Acorn's excitement at the prospect of getting into previously no-go markets, the signs are that PC realism has dawned on the company.

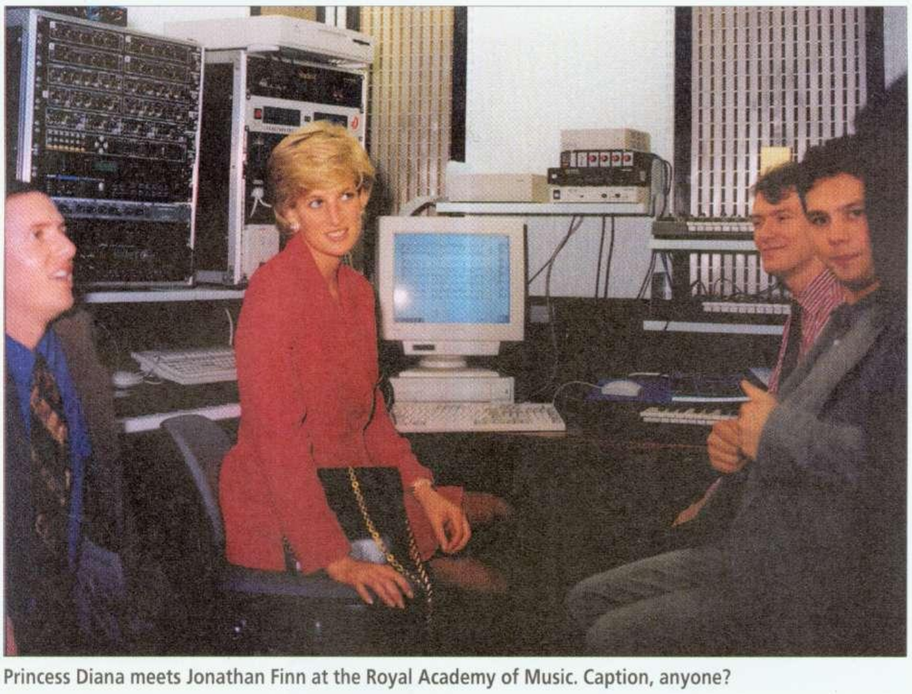
The official line is that Acorn will, as previously stated, introduce a PC-compatible during 1996, but its market positioning will be that of a product for administration use in schools, not a classroom product. In other words, RISC OS remains Acorn's classroom flagship.

So has the RISC OS faction within Acorn squashed the hopes of the PC brigade? That's unlikely - instead it seems that Acorn has realised it cannot hope to support a range of PC products with the degree of expertise and experience it has with RISC OS platform computers and associated components like networking and software.

The very fact that Acorn will have a PC on its price list will satisfy the requirements of many wavering Acorn education customers and even potentially new customers. Acorn won't stop a school ordering a batch of Acorn PCs for the classroom, but don't expect Acorn to be able to back up the sale with in-depth networking and software support for classroom applications.

Even in the long term, it's not clear Acorn wants to create and grow a PC arm to rival its RISC OS business. The current thinking is that Acorn doesn't really want to increase its head-count to serve a thin-margin market.

Princess sees Sibelius in action



Princess Diana meets Jonathan Finn at the Royal Academy of Music. Caption, anyone?

THE hottest news in November was Princess Diana's candid revelations on BBC TV's *Panorama* programme. However, she failed to mention her 20-minute dalliance with an Acorn Risc PC running Sibelius Software's now-legendary *Sibelius 7* music software during a product demonstration at the Royal Academy of Music.

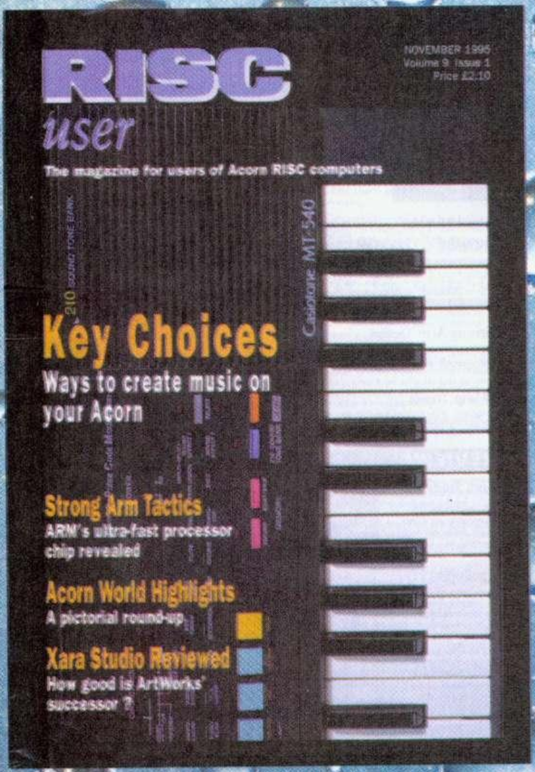
One half of the sibling duo responsible for *Sibelius 7*, Jonathan Finn, was on hand to show the princess how the software worked. Professor of Composition at the Academy, Paul Patterson, apparently told Princess Diana – who was surrounded by Risc PCs loaded with *Sibelius 7*, that the software has now become an essential part of composition studies there. As we went to press, Buckingham Palace would not comment on the news of the princess's musical interlude.

Sibelius Software
Tel: (01223) 302765
Fax: (01223) 351947
E-mail: eleanor@sibelius.demon.co.uk

Acorn confirms interest in PowerPC alliance

ART's Peter Bondar has detailed Acorn's stance towards adoption of the Power PC platform being developed jointly by IBM, Apple and Motorola. Bondar says Acorn will keep a close eye on the emerging technology and is very interested in the Common Hardware Reference Platform (CHRP) which was unveiled at Comdex last November.

CHRP is a PCI-bus hardware platform based around the Power PC processor that features very advanced system memory performance. One attraction of the platform to Acorn is that it is theoretically possible to build an ARM-based plug-in card to endow a CHRP machine with RISC OS compatibility. If Acorn marketed such a system, it would almost certainly also include a future version of the Apple Power Mac operating system, as this is specified as the standard Desktop operating system by CHRP.



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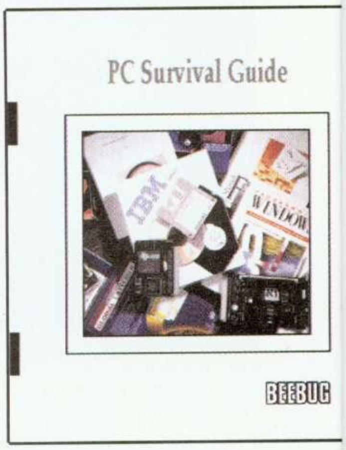
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Acorn model range tweaked

In 1996, we finally say goodbye to the A3020 and A4000 models, neither of which comply with stringent new EC CE electrical and electronic regulations. These models will continue on sale into 1996 but all stocks will have been manufactured in 1995. This means the A7000 becomes the entry-level Acorn desktop computer and revised pricing can be expected.

Acorn is promising progressively faster versions of the A7000 during 1997, which will enable the use of greater resolution 32,000 colour screen modes. A new 17in monitor will soon replace the trusty Risc PC's AKF85. The new AKF90 will be similar in specification to the AKF85, but will be technically different. Acorn is currently sourcing a new, higher specification, top-of-the-range 17in monitor with an 83KHz line rate for 75Hz screen refresh at 1280x1024 display resolutions.

We can expect more additions, both cheaper and dearer, to the highly successful Pocket Book range in the next two years. To be announced at BETT will be a Pocket Book solution package called Pocket Lab, which not only include the hardware, but training, curriculum support packs and other added value items like data loggers.

Over on the networking front, a new version of *OmniClient* is in the pipeline, which adds the IP (Internet) protocol to Microsoft NetBEUI featured in the original *OmniClient* release. The third remaining network protocol in widespread use on PC networks is Novell IPX and we can expect an announcement regarding this later in the year too.

Phileas, the Web browser for *InterTalk* is expected to ship at long last on 1 February. *Phileas* has been developed specifically for the school and classroom scenario and makes extensive use of pre-cached Web pages accessible over an Acorn network.

A remote access client is under development, there will be improvements to SchoolServer and a cheaper intermediate departmental server machine is on the way. Acorn has also revealed that it is working on Replay 3, which will be compatible with an increased range of foreign movie standards and which will be able to multi-task using video-style time coding.

Building on the simple videophone system demonstrated at Acorn World, better performance and the addition of colour will be delivered during the year. A surprise is that Acorn is working on a T.120 standards-based application sharing add-on for the videophone to create video conferencing system.

We'll have a full report of Acorn's BETT announcements next month.

SEMERC's motivating Claude & Maud

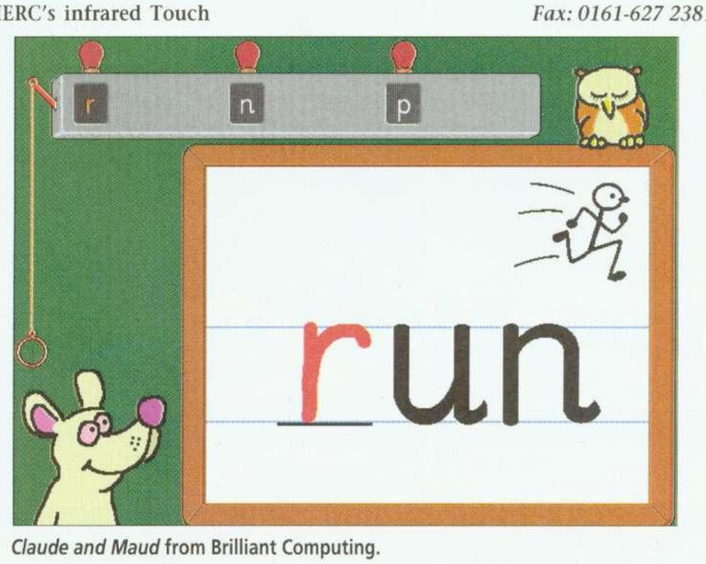
COURTESY of SEMERC associate, Brilliant Computing, enter *Claude and Maud*, an educational program designed to motivate children to practise letter formation. They can freehand copy or trace letters using either a mouse or other suitable input device like SEMERC's infrared Touch IT touch screen.

Maud is an owl and *Claude* is a rat. One or the other animal character will tell users how well they are doing. A speech option lets the program speak the letters on the screen.

A teacher can choose a particular basic style of letter writing by selecting where the starting point of a letter should be and whether to use guide lines and points.

While Claude and Maud indicate how well letters are being drawn, a progress log can also be generated for the teacher's use. *Claud and Maud* is priced £36 + VAT for a single-user and a site licence costs £72 + VAT.

SEMERC
Tel: 0161-627 4469
Fax: 0161-627 2381



Claude and Maud from Brilliant Computing.

Cumana rescued

Cumana's period of administrative receivership has now ended. It has been bought by Economatics and the core staff remains, albeit now with only five from the original Cumana.

Naturally, Cumana is eager to fulfil all orders placed during its period of receivership – since 1 November. Priority is being given to Oscar CD-ROM drives bought in an Acorn special offer. Cumana is re-opening accounts with its suppliers, including Panasonic, and hopes to clear its backlog of orders for proTeus drives by the end of January.

Economatics did not take on any of Cumana's liabilities, so people with unfulfilled but paid for orders from before Cumana called in the Receiver have no guarantee they will get their goods. They should contact Cumana as soon as possible.

Also, no Cumana warranties from this period are valid, although the company will try to honour these where possible.

Cumana
Tel: (01483) 503121
Fax: (01483) 451371

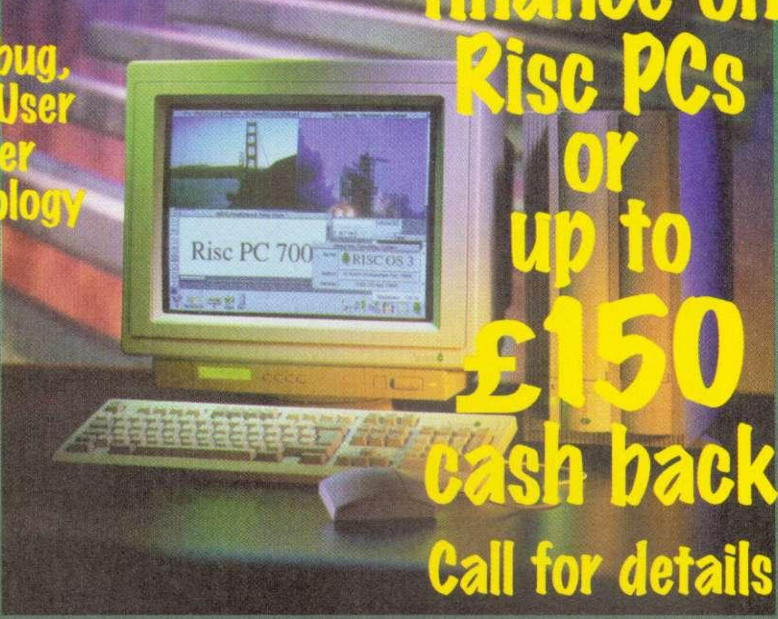
Alternative input

Peripheral design and manufacturing specialist Penny and Giles Computer Products Ltd will show the latest version of its award winning Hereward computer input device at BETT '96 for the first time. The Dorset-based company has been producing the original Hereward device for four years. It was developed with special needs in mind and has a highly ergonomic design.

The Mark 2 version is smaller and requires less hand movement effort to access buttons and is less fatiguing to use. Its more compact dimensions mean it can be located closer to the keyboard, thus reducing the angle with which a user has to turn from the keyboard to the device. It's also easier to fit to wheelchairs than before.

Penny & Giles Computer Products Ltd
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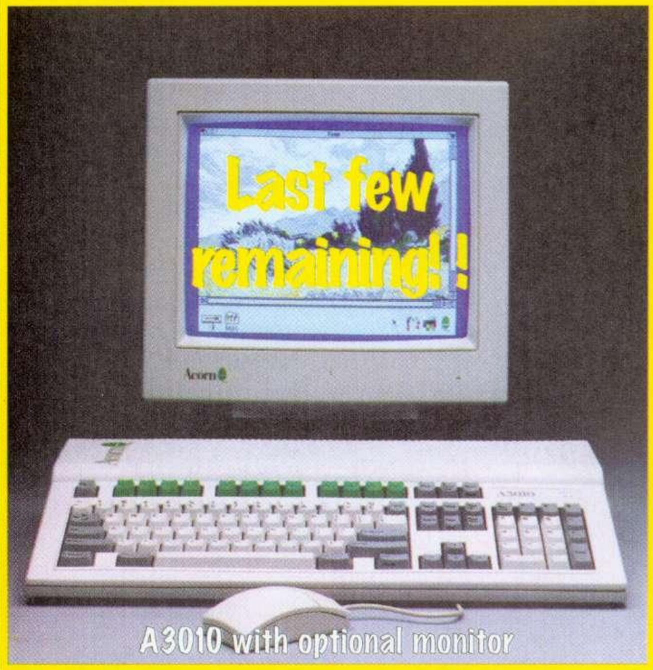
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Acorn share price soars on NetSurfer rumours

AT the beginning of December, Acorn's share price rocketed past the £2 level in response to some press speculation that the company was to become a player in the topical area of low-cost Internet terminal hardware. Enthusiastic noises about ARM from Oracle, which is to license Newton technology from Apple, culminated in a story published in the *New York Times*, which was then carried by the *Daily Express*. Even a project or product name of 'NetSurfer' was mentioned.

Peter Bondar, who heads up the new ART (Applied Risc Technologies) division within Acorn, admitted that there had been some thoughts about Internet terminal products for several months and there had been discussions with unnamed third parties. After all, Acorn – with its ROM-based operating system, low-cost ARM processor and high-performance graphics – could theoretically build an Internet terminal in a relatively short time and for a lot less than other potential players.

At the time of writing, Bondar has indicated that there are no signed and sealed plans to develop a commercial Internet terminal product, though some prototypes based on existing Acorn hardware had been lashed up for evaluation purposes.

One excellent piece of news is that out of the Internet terminal consideration, Acorn has definitely decided to port Sun Microsystems' Java language, which looks like being a standard for Internet browser plug-in distributed applications, endowing browsers with multimedia and other attributes as they are required during an on-line session.

Topologika goes for gold

Topoligika's Marshal Anderson won't forget BETT '95 in a hurry – after all, he won a Gold Award for the company's *Music Box* title. Hopes for a repeat performance lie with a new package called *Maths Book*, which is designed to help children practise addition and subtraction.

Topologika, who will be on stand 406 at BETT, will also be showing the latest of eight *Freddy Teddy* titles for infants. The latest release, which gained its first public showing at Acorn World, stimulates youngsters' sense of direction.

Another new title from Topologika to be given a BETT airing will be *MIDIBox*, an add-on to *Music Box* which provides MIDI instrument capability given the necessary hardware. It will also give non-MIDI applications the ability to play via MIDI. Topologika's Brian Kerslake says he is also hoping to show new Acorn versions of *Punctuate, DataGraph, Navigator, Talking Rhymes*, plus some demos of other Acorn titles scheduled for release later in 1996.

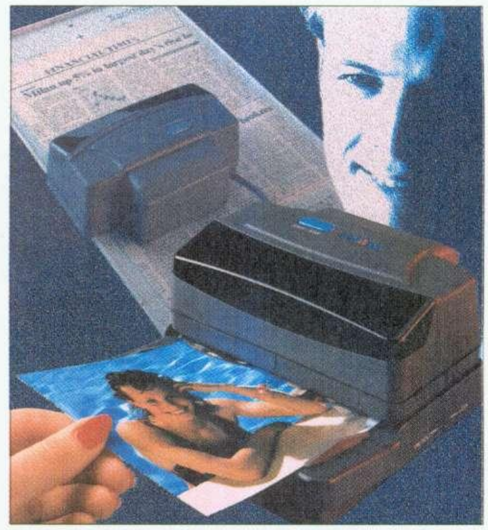
Topologika
Tel/Fax: (01326) 377771

Irlam low-cost colour scanner

IRLAM Instruments has joined forces with Primax, the Taiwanese peripheral manufacturer, to develop a colour scanner package for the Acorn market. The full-width 300dpi hand-held Primax ColourMobile scanner can sense up to 24-bit colour depths or 256 grey levels and is designed to glide, motor-driven, across the surface of the sheet being scanned.

Irlam usually has a hand in designing hardware, but this time the company's job was to port its RISC OS image acquisition software to the Primax scanner unit. It interfaces via a bi-directional parallel port, which is featured on Acorn machines from the A3020, A3010, A4000, A5000 and later. The best news of all is that the price is just £199 + £5 p&p and VAT, making it one of the most affordable 24-bit colour scanners on the market.

Irlam Instruments
Tel/fax: (01895) 811401
E-mail: sales@irlam.co.uk



Irlam's low-cost Primax scanner glides over the page.

Acorn User diary

If you have an event you'd like including, send it to *Acorn User* Diary at the editorial address or e-mail audiary@idg.co.uk.

Date	Event	Venue	Contact
10 – 13 Jan	BETT '96	National Hall, Olympia	Ticket hotline: 0181-984 7711
27 Jan	ARM Club open day	Belmont School, Mill Hill, North London	The ARM Club: 0171-624 9918
7 – 9 Mar	The Education Show	Halls 11 & 12, NEC	Ticket hotline: 0181-984 7711

Canon upgrades the BJC600

ABOUT three years ago, Canon launched the first really high-quality, three-colour plus black inkjet printer – the BJC600. A year ago the 600 was face-lifted to the BJC600e and now comes its latest makeover, the BJC610. The main improvement in the new model is the implementation of true 720x720dpi, answering the challenge from Epson's excellent Stylus product. Sample prints on special coated paper support Canon's claims that the new printer can deliver near photographic quality output. Canon's recommended price for the BJC610 is £449 + VAT.

Canon (UK) Ltd
Tel: 0181-773 3173
Fax: 0181-773 2182

ARM satellite chip

ARM processing power is at the heart of a new chip for satellite and terrestrial broadcast network communications. The chip was developed in collaboration with SAIT Systems, a Belgium telecom company, and the European Space Agency by a company called IMEC. The Advanced Spread spectrum Transceiver ASIC (ASTRA) is a high-speed, low-power chip used in a Programmable Mobile Communications Modem (PMCM) – whatever that is!

Lindis touching deal

SimpleTouch is what Lindis International has called its new budget-priced resistive touch screen. A SimpleTouch can be fitted to most standard computer monitors and Lindis expects both schools and personal users will buy it. The touch screen technology actually comes from MicroTouch, the largest manufacturer of touch screens in the world. A SimpleTouch kit includes software, cables and a fitting kit and is suitable for either 14 or 15in monitor sizes. The price is £225 + VAT.

Lindis International
Tel: (01986) 785476
Fax: (01986) 785460

ARM Club CD-ROM

The ARM Club launched its very own CD-ROM at Acorn World. In case you didn't see it there, the CD contains the best of the club's Public Domain and Shareware software and is priced £19.50 inclusive.

On another note, the ARM Club has discovered a hacked version of the *GameOn!* program on a third-party public domain CD. Apparently the software was 'modified' to make it look like a Public Domain offering, which it most certainly isn't. If you bought a CD at the show which contains a 'public domain' version of *GameOn!* – beware, you won't be eligible for a discounted upgrade to version 2.0 of *GameOn!*, which was released at Acorn World.

The ARM Club
E-mail: armclub@nucleus.demon.co.uk
Tel: 0973 656523

New Risc PC 486/586 cards

FIRST shown publicly at Acorn World, Acorn's second-generation 486 Risc PC co-processor cards are now available. The new cards employ the Mark 2 custom ASIC designed in conjunction with Aleph One and Future Technologies. Three models are listed, all using IBM Blue Lightning chips, including the Pentium-class 5x86. The new custom ASIC has been re-engineered to support higher specification x86 processors and to optimise performance by making use of a writeback cache.

Unlike the original Texas Instruments 486SX/40 card, which operated more like a 16MHz part – even though it was clocked at 33MHz – all the new card variants appear to perform much more closely to their expected target ranges. The top-of-the-range 5x86 card, a clock-tripled 100MHz device with a large on-chip primary cache and advanced instruction pipelining, delivers near enough Pentium 75 level performance according to benchmarks, despite making do with a 32-bit 486 bus rather than a real Pentium's generous 64-bit bus.

The new processor cards come with a new version of the PCx86 card software which adds 16-bit sound support, revised configuration and installation utilities, and enhanced Windows 3.x drivers for faster graphics performance. There is also additional CD-ROM support for Kodak Photo CDs. The new software is also available as an upgrade option for owners of the first generation of Risc PC 486 Card.

The new Risc PC x86 Cards are supplied with PC DOS 7.0. Windows 95 does work with the new cards, but Acorn says it is not yet in a position to support Windows 95 and the graphics drivers are not Windows 95-specific. A significant change is that processors and second-level cache RAM is socketed so owners can upgrade the specification of their card if required. Aleph One can advise on upgrade strategies and provide the necessary service procedure.

Pricing (inc. VAT):
5x86 100MHz, £586.33
486 DX4-100, £351.33
486 DX2-66, £292.58

Acorn will discount purchases by £100 to existing owners of first-generation cards.

PCx86 software upgrade, £9.95 (for existing Risc PC 486 Card owners)

ARM 7100 core targets markets

ARM Ltd has revealed plans for a high integration microcontroller, the ARM7100, which will be used in PDAs (personal digital assistants like the Apple Newton, for example), mobile communications and office automation. The ARM7100 contains all the functionality system designers need in a low-cost, low-power consumption, yet powerful, single-chip solution.

Based on the ARM710 microprocessor, the 7100 integrates complex peripherals which tend to make competing solutions more expensive. Supported peripherals include LCD screen, direct DRAM interface, PLL clock multiplier, serial ports, Infra-Red IrDA (Infra-red Data Association) SIR protocol support, timers, codec (compressor/decompressor) interface and real-time clock.

ARM says the 7100 will form the hardware base of an open architecture serving personal electronics. Support software in the areas of device drivers, operating systems, communication support, desktop interfaces and application software for the ARM7100 are all under development. Robin Saxby, CEO and Managing Director of ARM, commented: 'Design engineers already thought ARM offered the best solutions for high performance personal electronics like PDAs and digital mobile phones. With the ARM7100, we integrated the most critical components into one low-cost device, which is really helping designers speed product development time and extend battery life.' Cirrus Logic will be the first the first ARM semiconductor partner to make the ARM7100.

Zynet launches into education

Minerva has announced that its Internet business, Zynet, has been officially launched for the education market. Zynet has actually been up and running since 1994 and education services have always figured in the planning, but now, with a points of presence (POP) expansion of 60 nodes, Zynet is gunning for schools all over the UK.

Minerva is banking on its 10 years of educational software experience to enable it to provide tailored Internet connection solutions to schools via Zynet. This includes the provision of access systems which can be conveniently controlled – keeping young inquisitive minds away from the less salubrious aspects of the Internet, for example. Dial-up modem and ISDN connection packages are available and the tariff starts at £10 a month (but see the special offer in this issue).

Zynet
Tel: (01392) 426160
Fax: (01392) 421762
E-mail: zynet@zynet.net

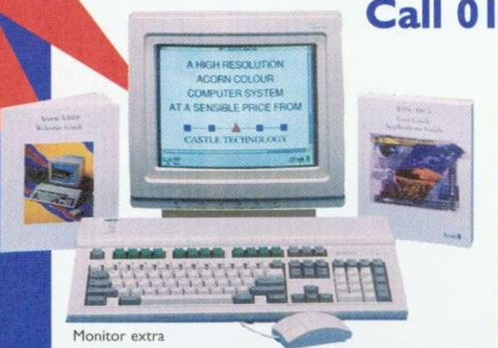
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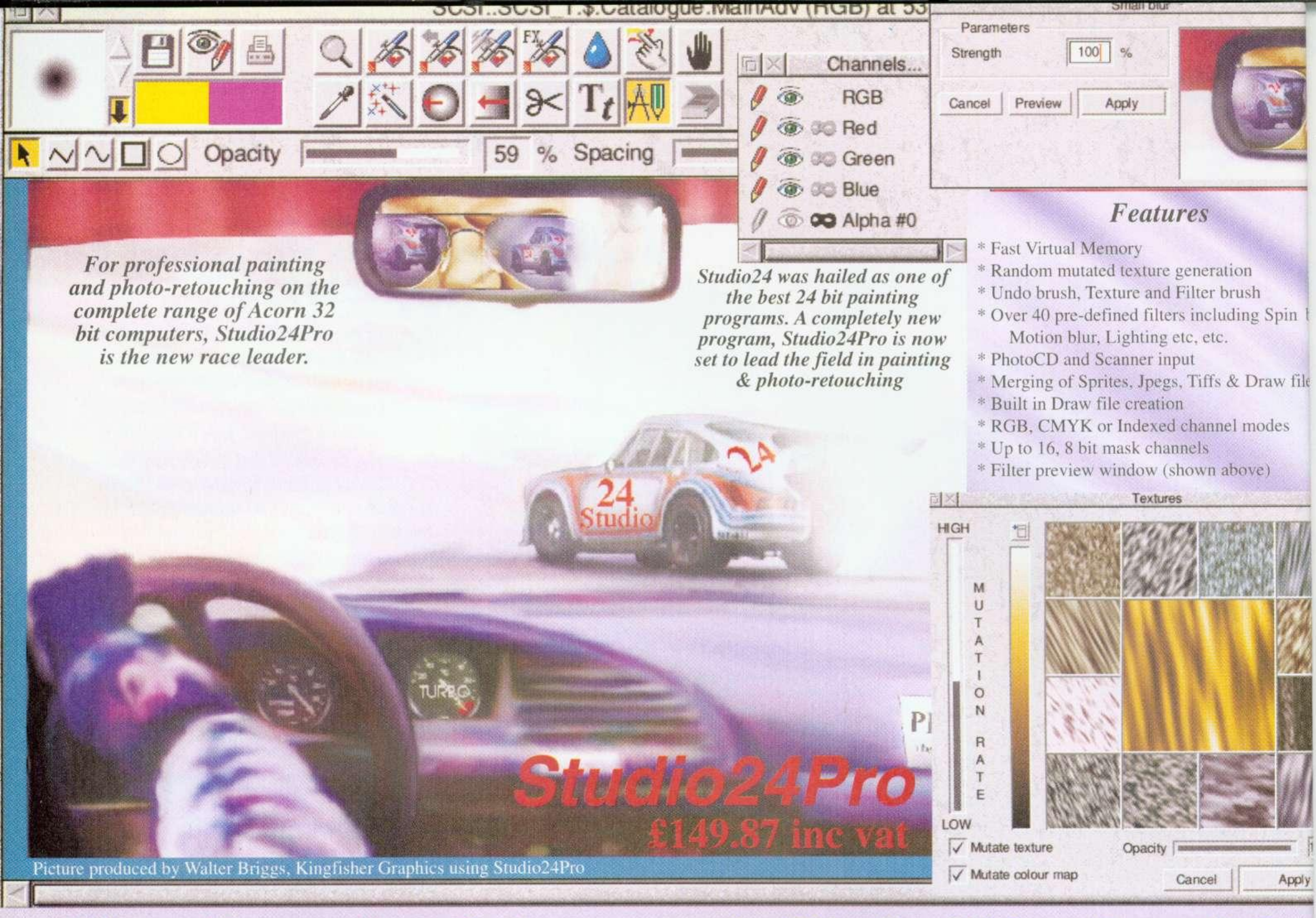
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Picture produced by Walter Briggs, Kingfisher Graphics using Studio24Pro

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ArtWorks Video Tutorial



A Brand new product from Pineapple is this VHS Video Tutorial covering the use of ArtWorks. Walter Briggs is the tutor for this 1 hour video which shows how to use all the ArtWorks tools and then goes on to show how Walter produced his famous Tiger head picture. Walter also draws an impressive landscape picture which can be copied by those with no artistic talent at all!

ArtWorks VHS Video Tutorial £19.99 inc vat

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New from Pineapple the superb IX-4015 A4 flatbed Canon colour scanner. Supplied with Imagemaster and Twain software this scanner makes the perfect companion for our Studio24 re-touching software. With a basic resolution of 400 x 800 dpi this scanner is unbeatable value.

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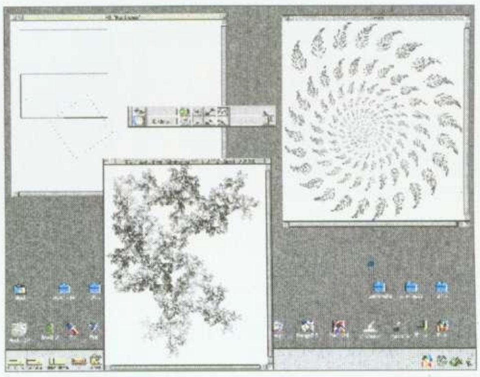
The full Montage – painting with fractals

QUITE a way back I wrote about a program called *Montage*. At the time it had not been officially released but the current state of play is very different as this curious piece of design software has a well-designed manual, a step-by-step tutorial that even the likes of me can understand, and a pretty folder-type thing in which all the bits and bobs happily live together.

'Montage,' as the author puts it, 'Is a creative fractal art package that enables the creation of very interesting and extremely complex imagery from the most basic of design primitives using the wonders of Iterated Function Systems (IFS).' Whoosh, yes, that went straight over my head too, so for those who are not as mathematically minded as Beniot Mandelbrot, this is essentially a program where you draw shapes, juggle them around a bit, and with a bit of fractal wizardry the package creates pictures for you.

Seeing as much of the natural world appears to be guided by the principles of fractal geometry, so the best kind of images you can create with *Montage* are very much the kind of thing you might see in nature. Corals, trees, leaves, mountains, clouds, crystals, sand dunes, and generally all things that scenic postcards tend to include. But the real magic of the program lies in the simplicity of the initial objects which the program uses to create the marvellously complex end results. Just a few simple bezier shapes and a moment later you have a perfectly formed fern leaf. Fantastic.

One gripe however is the rather unintuitive tool box which the author, Michael Rozdoba, seems to have forgotten should be totally idiot proof and also as similar to other Acorn packages in feel as a program of this nature can be. It



really is picking nits, but I imagine that the younger viewers would possibly find the unusual feel of the program a little disheartening.

Staying on the subject of education, *Montage* is an extremely useful learning tool for understanding and applying the inherently complex nature of fractal science. This package not only creates imagery which would otherwise be impossible or else extremely time consuming to create, but it also teaches about the principles thought to lie behind much of the inspiring creation artists go about slapping on their canvasses.

It is good value at £49 and will be of interest to anyone from maths phobic artists to those who can program chaos simulators with their eyes shut. I haven't yet got to grips with the strange way things move about on the screen, but the program has already revealed new avenues of creative possibility and design.

The Really Good Software Company
Tel: (01582) 761 395
e-mail: rgsc@turnbull.compulink.co.uk



Pic of the month

RARELY do we see pic of the month entries which use vector graphics to new effect. But this month's winner, Daryl Farmer, has achieved Picassoesque imagery using *ArtWorks*. £20 makes its way to Daryl and perhaps to you one day if you are brave enough to send your image in for the toughest, most gruelling contest in which computer generated artwork could possibly fight. Remember that the prize includes a free slide recording of your image courtesy of the Digital Darkroom (tel: 0181-311 2001).

My thanks and apologies to all those who have sent in pictures for the CD-ROM. Unfortunately, the CD-ROM's sponsors did not leave any room for the promised portfolio but we plan a future CD-ROM which hopefully will include all your pictures, so keep them coming.

Studio24 Pro – bug fixes and more

Work on *Studio24* is progressing faster than I can write about it. The latest version (2.04) sees significant improvement over fatal error control and has removed most of the major and many of the minor reported bugs. Extra features include on/off control of virtual memory, file deletion from disc on closure, dragging of cutouts between windows, cut and paste pipelining to supporting packages and much more.

In a couple of months we will have a complete round-up of the bitmap packages available: *Studio 24 Pro, Photodesk 2, The Big Picture* and the re-vamped *DA's Picture*, as well as the existing packages. Watch out for the graphics issue of *Acorn User*.

Pineapple Software
Tel: 0181-399 1476

Hands-free colour scanning

One of the problems that is usually associated with budget, handheld scanners, is that it requires a fair degree of concentration to keep the scanner tracking slowly and accurately enough to stop your scan from looking like it's been skewed through some strange contortion filter in *Photoshop*.

Irlam's new hand scanner is a full-colour 400dpi device that does away with human help and moves on its own, forgoing the need for manual effort and scanning at an ideal speed. The only problem that I could imagine is scanning near the edge of your desk as there is no forward information regarding the scanner's resistance to three foot drops.

Irlam Instruments
Tel: (01895) 811401
e-mail: info@irlam.co.uk

Contacting me

You can contact the Graphics page by writing to me, Jack Kreindler, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP, or by e-mail to: jack@argonet.co.uk.

Public Domain

TranspGour



The anonymous demo *TranspGour*, which features clever graphics routines but could be a bit more interesting.

A SMALL graphical treat for Risc PC owners appeared anonymously on the net recently and, although short, is worth a look. The code produces a rather nice transparent vector object that spins round over a 3D starfield and Risc PC background picture. It's quite nice to look at, but frankly gets boring after a few seconds. After spending time getting the nice graphics routines working, what's the point in failing to use them in something interesting to look at? There's much more to producing demos than knocking up the main code routines. Still, a good first effort; let's hope that some more are forthcoming.

TranspGour is on disk Demo146 from The Datafile – alternatively, ftp the program from Stuttgart.

Mercenary

MERCENARY is what author Michel Grimminck describes as 'a half finished game', and I must agree it is somewhat ragged around the edges. But for graphics fans its still worth a look. Let's hope Michel can find the time to finish what is obviously a very promising program.

After traversing through a few introductory menus, the game gives you control of a tank which you can drive over the undulating polygon landscape created by the game system. Although the game offers little to do other than explore the virtual world and loose off bullets and missiles at passing tanks, it does demonstrate the potential of this sort of simulation.

Mercenary can be found on The Datafile's disk Game79, and the Stuttgart ftp server.

Proposal

ALTHOUGH new PD games seem to have been fairly thin on the ground in recent months, *Proposal* by South African coder Peter E. Ottermann (mentioned in last month's Game Show) is here to fill the gap. It is by far the best PD game I've seen since way back in the times when Tom Cooper used to write them.

Proposal gives you control of a spaceship in our own solar system. The local planets and the sun are represented well by scaled sprites, with the enemy spaceships which you have to destroy shown as texture-mapped 3D vectors. Add to this a nice two-layer starfield of local debris and distant stars, and you have a quite a realistic and convincing view from your ship. Peter plans to add space stations and a whole range of ships to interact with.

Peter says that *Proposal* is just a small part of what will be a large space game, made up of three distinctly different sections. As it stands, all you have to do is fly round and shoot down several alien spaceships.

The feel is very reminiscent of *Elite*, with four directional controls and an accelerate and brake key. Overall speed is very good, and the controls respond well. Combat is quite tricky as the enemy ships require quite a large number of hits before they go up in flames. It's also not all that clear whether your bullets are hitting the ship you're shooting at; a few larger explosions or *Elite*-style flying splinters would help in this respect, although you certainly know about it when the alien finally blows up completely.

Despite these niggles, I have to admit that the difficulty level is set about right, making the game a nice challenge. Notwithstanding the lack of sound, it's a great PD offering which is well worth getting hold of. Watch this space for further information on its progress.

Proposal is on GA79 from the Datafile and from hensa on the Net.

New column

I'm pleased to announce that after a minor restructuring of the *Acorn User* editorial pages, we'll be featuring two full pages of PD software every issue. I'm aiming to maintain the regular look at new software on the scene, as well as looking back at some classic programs from the past. I also hope to introduce some new features and one-off specials. I'm kicking off this new trend with a visual feast of programs for this graphics special.

If you'd like me to cover anything in particular or want to comment on the column in general, please get in touch at one of the addresses below.

Nem's PD

Check out a good range of PD software available from a new library run by Paul Solecki. Nem's PD stocks all kinds of PD software including a massive range of tracker modules, graphics files and demos. Everything in the library is available on a pic 'n' mix basis, and a comprehensive catalogue program allows you to select the files you want, with ease. 800K disks are £1 per disk only. Contact: Paul Solecki, 9 Rosedale Ave, Chesterfield, Derbyshire, S40 2UY.

Demo vote

The PD page will soon be featuring the results of a net-wide vote on the best Acorn demo available. The vote is being run in conjunction with Frederic Elisei's Acorn demo pages. Anyone can take part by surfing to http://droopy.imag.fr/~elisei on the web.

Eventshell update

Eventshell has been updated with several bug fixes after a new release at the show. Version 2.02 is on disk UT279 from The Datafile.

Contacting me

You can contact the PD page by writing to me, Paul Wheatley, at *Acorn User*, IDG Media, Media House, Adlington Park, Macclesfield, SK10 4NP. Or preferably, by e-mail to quantum@digibank.demon.co.uk or online on the Arcade BBS.

Public Domain

Xtreme

THIS is a colossal 4Mb demo created by a collaboration between some of the best groups on the scene. Although produced and put together by BASS, it features contributions from Arm's Tech, Excelsior and Eddie (sic). As you can probably tell from the massive data size of this production, it has a large number of parts featuring everything from texture mapping and liquids modelling to complex light-sourced models. In fact the entire demo takes nearly 20 minutes to watch, and that's without any scrollers or overly long sections to sit through.

There are way too many effects to describe them all in detail, but I must give some mention to the fantastic 3D routines present. Frederic Elisei of Arm's Tech has contributed some of his amazing light-sourced objects routines, including spinning dragons, a spookily lit Beethoven and rotating, texture-mapped head.

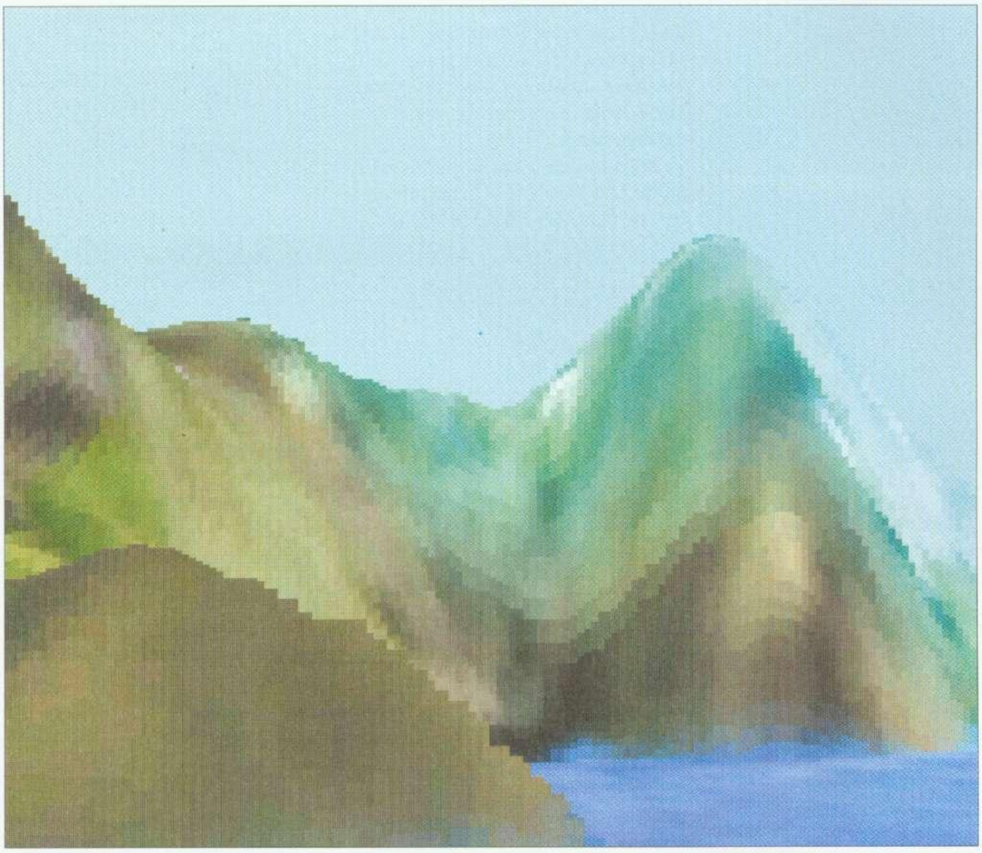
Jan and Gil who both code for BASS wrote most of the shaded vector objects which spin into the demo with reassuring regularity. The best of these must be the incredible metallic-looking hot air balloon.

By far the most interesting routine in the demo is the lengthy voxel landscape routine by Gil. The section begins by flying across a misty textured landscape before approaching a castle along a raised road; very dramatic and nicely coded.

As you can probably tell from my descriptions, there's a lot in this demo I like, but unfortunately I must moan about the lack of links between effects. Most of the code routines use separate music and make the demo appear very disjointed. This, combined with the use of some very dated and rather cheesy effects spoils the overall effect.

Having said that, the quality of most routines is much better, making this a valuable addition to anyone's demo collection. Some effects are Risc PC only, so don't be disappointed if you run it on an old machine.

Xtreme requires a special order of three HD and one DD or seven DD discs from the Datafile. Alternatively it can be downloaded from the BASS and Arm's Tech web pages at: http://droopy.imag.fr/~elisei.



Just one small part of the *Xtreme* demo.

Lunatic

AS promised last month, here's a full review of Archiologics' new demo intro released at Acorn World. Unfortunately, the production was written on pre-Risc PC machines and uses direct hardware accessing techniques for speed. This crashes VIDC20-based machines (for instance, the Risc PC), but running the demo on an A3010 (cheers Phil) I was very impressed. It's always difficult to comment objectively on a demo written for the ARM250 when you've just seen a Risc PC demo, but I was pleasantly surprised by the speed and quality.

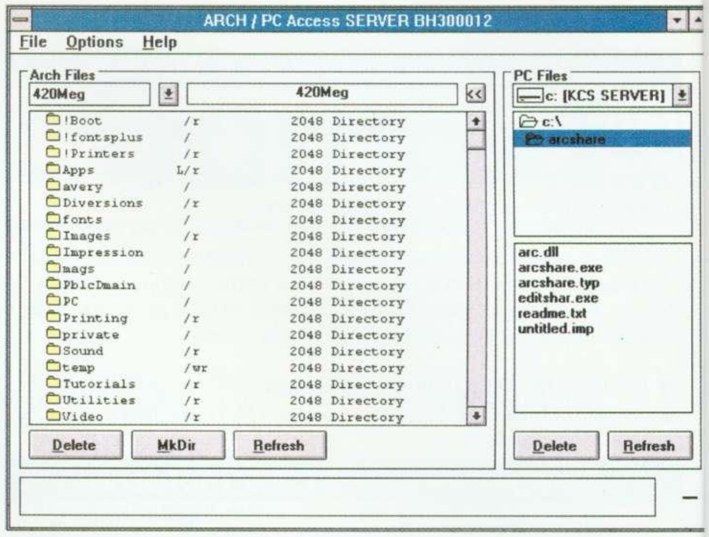
The production is actually a 64K intro and yet still manages to cram in loads of effects. After a brief text loader, the demo launches into an array of nicely-produced routines. Each part has been designed well, and moves on to the next section fairly rapidly. You don't get bored with this demo.

Among the best effects are an optimised magnifier with glass balls moving over a picture, a very fast ARM250-based voxel landscape and a fast, if rather chunky, fractal zoom.

No complaints about this production though. I'm frequently annoyed by the lack of proper design input and cohesion in Acorn demos, but *Lunatic* passed through my perfectionist gaze intact. To sum up, a great intro from a cool team – I'm awaiting their next release with bated breath. *Lunatic* can be ordered as part of a pic 'n' mix disc from Nem's PD.

Arcshare™

Acorn to PC Networking Software



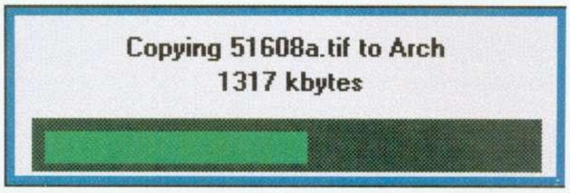
Its finally happened. A company has come up with a simple and inexpensive solution to an age old problem.

Getting access to files stored on a PC has always been a problem for Acorn computer owners. There has always been Floppy Disk transfers, but these are slow and limited to 1.44Mb. There has been several attempts to "Network" the two computers together but most attempts have been problematic and needed a great deal of extra hardware.

Arcshare is the latest program from KCS which allows any Acorn computer with an Access network card to talk to any PC with a network card & Windows.

Arcshare needs no extra hardware other than cheap network cards. Arcshare is very easy to use through its graphical interface and is, on average 40 times quicker than using a floppy disk, but with no file size limitation. Arcshare can even use CD Rom drives from a different machine.

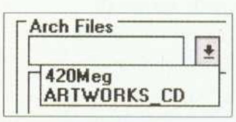
Available Now.



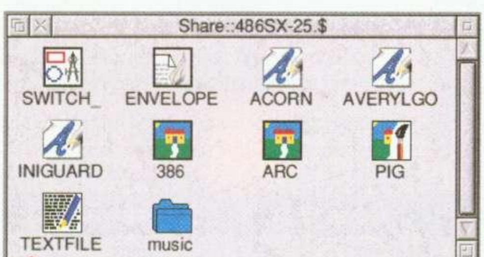
In the Main screen on Arcshare Client, both the Acorn and the PC directories are visible. Files can either be copied, or deleted, even new directories can be created on the Acorn from the PC. Arcshare has the advantage, that it can be run directly from the Windows Filemanager so that file manipulation is simple. Arcshare can run under a Windows for Workgroups network in conjunction with other PC's on the same network. There is no limit as to the amount of Acorns that can be seen from the PC on the Access network.

On the Acorn, the PC directories are designed to look just like any other Acorn directory. In fact, Arcshare makes the PC behave as if it were part of an Access network. Files can be copied from the PC directories to acorn directories in the normal manner. Files can even be copied from one PC to another PC via the Acorn.

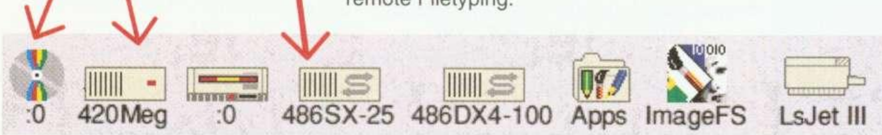
It's time to join the PC and the Acorn on the same network. Call KCS now to find out more about Arcshare and networking Acorns to PC's.



CD Roms, Hard Drives & other Acorn Computers can be seen & used by the PC.



The PC Directory looks just like just another Acorn Directory, thanks to Automatic, remote Filetyping.



Arcshare Client v1.4

* Allows file transfers between Acorn and PC Computers.
* No Filesize Limitation.
* Automatic Filetyping when the Acorn receives a file so that the file is ready to be loaded into an application straight away.
* Automatic File Extensions added when a file is transferred from the Acorn to the PC so that the file can be loaded into a program straight away.
* Easy to Use Graphic Interface.
* No "Dedicated Server" Computer required.
* Connects directly to Acorn Access Network. Very easy to setup and install.
* Works with Windows 3.1, 3.11, Windows 95 & Windows NT

Arcshare Server v1.4

* Has ALL the Functions of Arcshare Client v1.4 but with the following additional extras.
* Allows transfers of files from the Acorn.
* When a Window is open displaying a PC directory, all the files are filetyped even though they are stored on the PC!
* Files can even be copied from PC to PC from the Acorn.
* Any Acorn on the Network can access the PC.
* Makes the PC system look like another Acorn Access system.
* Files can be loaded into applications directly from the PC.

Prices

Arcshare Client v1.4
£79.00 & Vat

Arcshare Server v1.4
£99.00 & Vat

Available from:

Kimberley Computer Services. 73 Chapel Street, Leigh, Lancashire, WN7 2DA. Tel - 01942 677777. Fax 01942 672300. email - Info@kcsprem.demon.co.u

& other reputable Acorn Dealers

Coming soon to a browser near you

I'M in a bit of a dilemma. While keen to encourage all comms users to discover for themselves the wonders of the wide world of the Internet, I also want them to continue calling and using dial-up bulletin boards. The media hype would have us believe that everything you could possibly want is out there somewhere on the Web. That may be true if you know what you want, but you can be very much on your own typing in that first URL.

Bulletin boards can offer callers an exclusive selection of information as well as a special club atmosphere. You can communicate directly and immediately with others who have had similar experiences, problems, solutions and ideas as well as being able to debate and discuss differences of opinion. A BBS is an all-in-one site that has all this and the latest PD and Freeware programming and resources too.

Now I'm being asked if it's possible to reach Arcade BBS from the Internet itself, so maybe there is hope yet. A permanent connection would be prohibitively expensive for any hobbyist sysop, but a compromise is now possible with Freeware and PD software recently available. Tom Hughes' *FreeNet* software project has spawned several TCP/IP programs that can give WWW server and ftp server capabilities to Acorn 32-bit machines having a full-access Internet account.

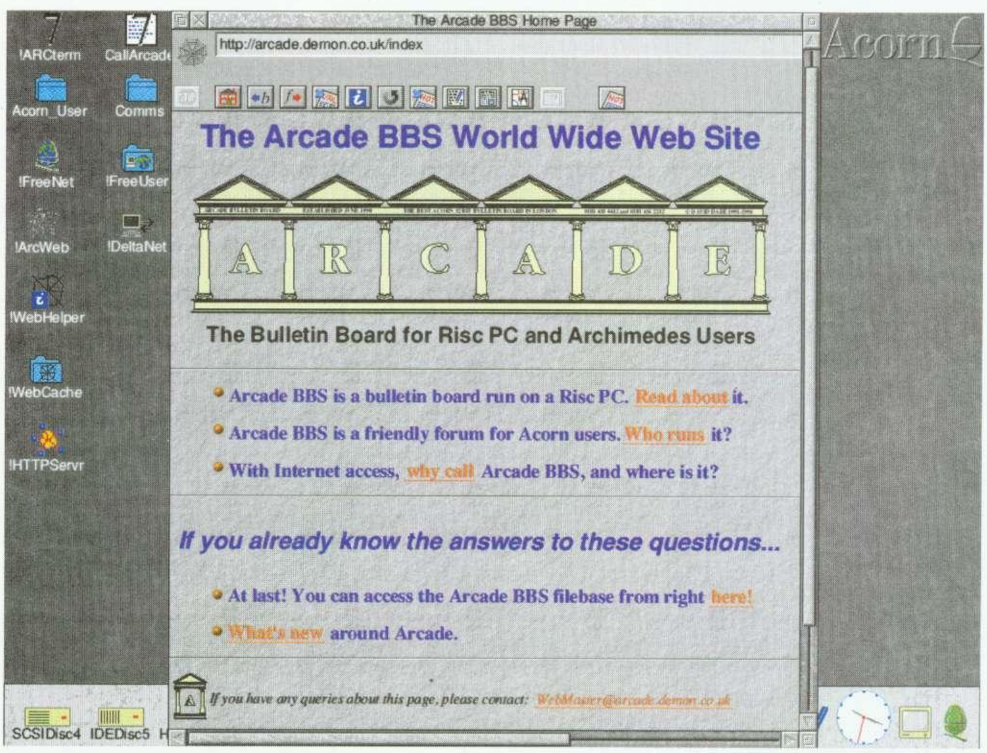
By running Chris Poole's Shareware *DeltaNet* server on the BBS Risc PC, I can now allow Internet users to reach the Arcade filebase via http and ftp from a set of specially created Web pages to point the way. Stewart Brodie's Freeware *HTTPservr* can also do the job and even offers imagemap operation, so some really whizzy graphic Web pages should be possible. To set up the link, a local call on a weekend at V34 to Demon will cost the BBS £3 + VAT for five hours, which is not prohibitive.

Watch out for announcements that this interesting experiment is up and running.

You can try this on your own Acorn machine locally using the *Freenet* starter pack and the servers mentioned above, which can be FTPd from the following places:

- The *Freenet* starter pack: ftp://cslib.ecs.soton.ac.uk/pub/Acorn/freenet/p.temple
- *DeltaNet*: ftp://cslib.ecs.soton.ac.uk/pub/Acorn/freenet/c.poole
- *HttpServr*: ftp://cslib.ecs.soton.ac.uk/pub/Acorn/freenet/s.brodie

So how about my dilemma? Well, when more than a couple of users at once try the Web pages over our 28800bps modem link to Demon, I think they'll realise that direct-dialling is much quicker and at weekends not much dearer, and we'll welcome them back.



Arcade BBS – now available on the Net, but only at weekends.

Thunderbolt to strike

Toby Mackenzie's Thunderbolt BBS is soon to join the London area BBS scene. It will run on an A3010 with a SupraFax 14400bps modem and will be online 24 hours. Thunderbolt will have, says Toby, some exclusive features, such as a Noticeboard, Recipe of the month, For Sale section and Good BBS pages. It should be online by February, so watch out for further details.

Mossoft gets rolling

Mike Mostowyj tells me of his new Mossoft BBS running *ArmBBS* on a A5000. Mike thinks it's time that Peterborough in Cambridgeshire had its own BBS just for Acorn computer owners and aims to make it useful and helpful for other users. Mossoft BBS is online 24 hours a day and the filebase is expanding all the time specialising in graphics *Draw* files. Speeds up to 14400bps are supported and Mike can be contacted by e-mail as well as on the BBS.

Mossoft BBS
Tel: (01733) 701501
mickle@mossoft.demon.co.uk

InNet challenges

James Pullan of Neural Net Design has tipped me off about the imminent release of a new PD/Shareware communications suite called *InNet*. Key features include a special Usenet news manager written by Graham Allan, *ITFN* – a fully featured news reader, its WWW browser and TCP/IP stack to replace the KA9Q application – with 'point and click' ftp transfer, and a Telnet terminal. Sounds too good to be Shareware? A review copy is on its way to me.

Neural Net Design
(01179) 663671
INS@cjc2.demon.co.uk

Contacting me

You can contact the Comms page by writing to David Dade, Acorn User, Media House, Adlington Park, Macclesfield, SK10 4NP, or by e-mail to: DaviD@arcade.demon.co.uk, or mail #2 on Arcade BBS 0181-654 2212.

Networks

DataPower for the network

Those who have used a database over a network will know that it is, at best, uncertain. These programs invariably generated huge amounts of traffic over the net and if more than a handful of users are on the network, it will begin to slow down and any more users will cause it to stop altogether.

Of them all, *DataPower* is about the best database to run across a network, but there are limits to what you can ask even this program to do. In fact, unless you specifically need its networking features, my advice has always been to create a RAM disc and drop a copy of *Scrap* and the data file you're using into it and run it from there. Steve Holroyd of HMTC actually wrote a program called *RAMScrap* which will set up a RAM disc with a copy of *Scrap* inside and set Wimp$Scrap to the copy of *Scrap* inside the RAM disc.

Iota has recognised that there is scope for improving *DataPower* and are working on a new version which should be available by the time you read this.

Iota
Tel: (01223) 566789

T Adaptors

If you are running a 10Base2 network, (sometimes called thin Ethernet), each computer requires a BNC 'T' adaptor, unless you're using a *SaferTap* cabling system. As a couple of you pointed out, the cost of these seem to range from just under £1 up to an astonishing £3.99. There seems to be little or no difference between them in terms of quality, although I was once supplied some that appeared to be coated with an insulating material which didn't make them very effective.

I buy all my networking oddments (including drop leads) from Lindy who has a comprehensive catalogue, is competitively priced and provides quality products.

Lindy
Tel: (01642) 765275
Fax: (01642) 765274

Contacting me

You can contact the Network page by writing to me, Geoff Preston at Acorn User, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: gpreston@arcade.demon.co.uk.

NetScrap

OF all the mail I receive about networks, one question which continuously pops up concerns the famous *Scrap* application. If using *Level4* file-server software, each user should have a copy of *Scrap* in their user area.

As Bill Lamin pointed out in the October issue of *Acorn User*, with use, these 'grow' and can consume enormous amounts of disc space. Bill outlined one way around this problem and here is another offering courtesy of Allen Keeley (with the help of Darrell Taylor of Room 20 Software).

NetScrap is placed in the root of the application server. When a client logs on, it creates a dummy *Scrap* directory in the user's network area if one does not already exist and points all the users of *Scrap* to this dummy directory. If the client deletes this directory, *NetScrap* will automatically recreate it the next time it is seen. The memory overheads are non-existent, although I'm told that files are occasionally left behind in the dummy scrap directory, apparently due to an error with the application using *Scrap*.

There is one small bug in the system however: the first time the dummy *Scrap* directory is created an error message 'Expression is a String' is generated. If the user clicks on Cancel everything then works fine. Perhaps there is someone out there who could fix that problem.

NetScrap is on the cover disc.

Mac networks

ACORNS and Macs do not sit well on networks together. The AppleTalk network protocol which Macs use to talk to one another is not understood by any of the Acorn networking software, although an AppleTalk version of *OmniClient* is promised.

One partial solution – the one implemented on the network at IDG – is to set up one of the Macs as a TCP/IP file server. Acorn machines (and PCs for that matter) can ftp to this machine using TCP/IP, and Macs can attach to it using AppleTalk. The only problem with this approach is that the Mac ftp client we have installed on our machine gives – you guessed it – non-standard replies, which the *Ant Internet Suite* currently doesn't understand.

This leaves you doing command-line ftp or even resorting to using *Netscape* on a PC card. Ant is working on the problem, though clearly non-standard protocols can only be supported when they are encountered.

Tip for the month

SOME programs still save files as applications – as several files within a directory prefixed with a pling(!). Opening a user area with more than two or three files of this type can take ages.

There are a couple of solutions to this problem. The first is to place two or three of the files each in separate directory folders, the second is temporarily to rename the files by removing the pling and the third is to open the directory holding down the Ctrl key, although this last method only works if you know in advance that the directory contains a lot of files of this nature.



Renaming files without the pling will considerably speed directory access.

Cover disc

Acorn User CD-ROM

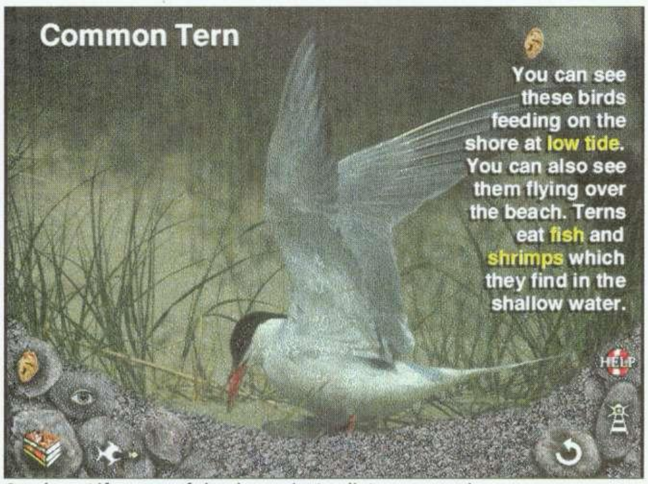
WELL, we said that we were going to do another one, and here it is. Actually, this is more like version 1.5; it was sponsored by Acorn Education and was done by us for them. There'll be another *Acorn User* CD-ROM a little later in the year, but this one will serve perfectly well to whet your appetite. With over 60 interactive demos of Acorn software and the up-to-date ftp site on the disc, there's sure to be something for you.

The disc is divided into three main areas – the Acorn Products and Services catalogue in *ACORN*, the Acorn ftp site in *FTP* and the selection of commercial demos in *DEMOS*.

The Acorn Directory

Acorn has provided its Products and Services catalogue in a series of hypertext stacks in the *ACORN* directory on the disc. To run these from the start, double-click on the *!HOME* stack, which will take you to the title page, then move to the contents page. You'll need a 2Mb machine to run the stack player *HSPlayer*, but the stacks themselves are compact and should all run on a 2Mb machine.

When you become more familiar with the layout of the stacks you will be able to find the subject that you are after simply by running the appropriate stack: *!TRAINING* for information on Acorn's training courses, say or *SOFTWARE.!DTP* for information on DTP packages.



Seashore Life – one of the demos in Anglia's presentation.

The stacks have links to screenshots and pictures to illustrate many of the products; these can also be viewed by opening the appropriate directory. The hardware shots are in *SHOTS*, while the software screenshots are in *SOFTWARE.SCREENS*, indexed by company then by product.

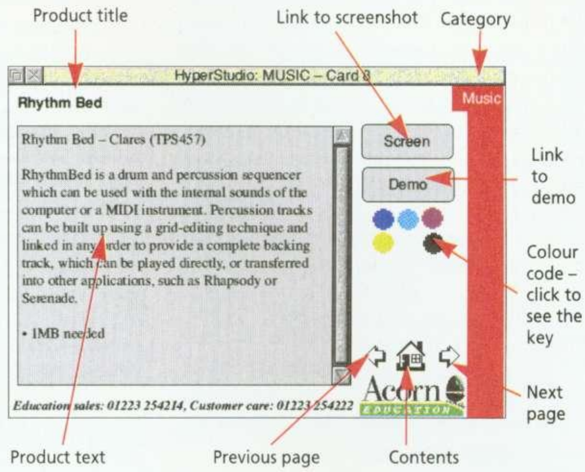
Some screenshots are TIFFs or deep sprites. These can be viewed on older machines by using *ChangeFSI* to convert them to 256- or even 16-colour sprites. *ChangeFSI* is provided in the root directory of the CD-ROM.

The *DOCS* directory contains useful documents such as price lists, dealer lists and so on. If (and only if) you are an education customer, the prices shown in *DOCS.EDUCATE* apply and you can buy direct from Acorn Education at those prices.

However, if you are *not* an education customer, the prices shown in the *DOCS.OTHERS* directory apply – these are given for Acorn products only. For other prices and for ordering, consult your local dealer.

The Acorn ftp site

The *FTP* directory contains the Acorn ftp site as it was on 1 December 1995. Among the recent updates are a new version of *Printers*, new printer definition files, and the latest DCI4 drivers and TCP/IP stack. For those who have never encountered the site before there's a wealth on information on there, ranging from highly technical application notes to the text of the Customer Hotline columns from past *Acorn Users*.



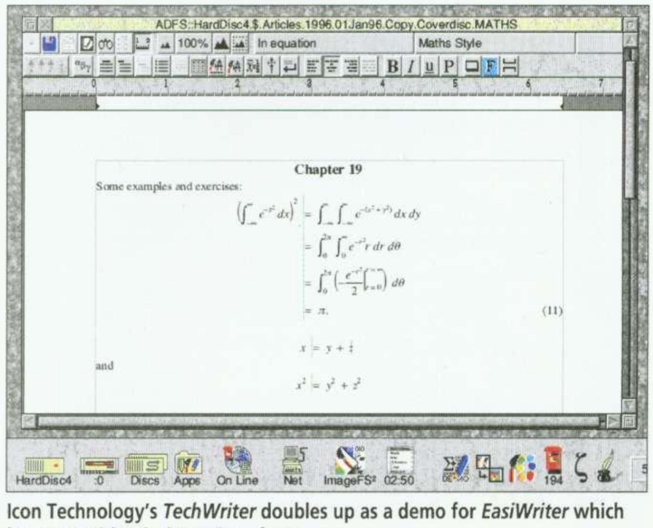
A typical product card in the catalogue.

A number of the diagrams are in PostScript format – these may be printed out on any PostScript printer. Usually they will be on the disc in other formats as well.

Commercial demos

The part of the disc that takes up by far the most room, the *DEMOS* directory is packed with demos of many of the packages in the products and services directory; over 60 of them. The demos have links from their respective pages in the hypertext form of the catalogue, but can easily be found in this directory anyway. Some highlights are:

- The Anglia presentation. This takes over 200Mb of the disc and demonstrates 10 of Anglia's CD-ROM titles.
- AVP's *PictureBase* demonstration. Once this is installed on your hard drive, it gives an excellent idea of the range and quality of the *PictureBase* resources.
- *Talking Textease* demo. This demonstrates both the latest version of the software from Softease and Jon Duddington's excellent *Speak* module.
- *Composition* and *Virtualise* from Clares. The demo version of *Compo* on this CD-ROM comes with a special cut-down version of



Icon Technology's *TechWriter* doubles up as a demo for *EasiWriter* which has a near-identical user interface.

Virtualise which will provide a virtual memory system for *Compo* only (note that this only runs on a Risc PC).

• *Impression Junior*. The full version of *Junior* is on this disc by way of being a demonstration for *Style*. *Style* has many more features and is more powerful: if you want to upgrade to *Style* you can do so before the end of January for the bargain price of £49 + VAT. Just contact Computer Concepts confirming that you have the copy of *Junior* from the cover CD-ROM.

• *Robert Burns* files. These aren't a demo as such, but are actually a set of trail files for the *Robert Burns* CD-ROM from Cambridgeshire Software House – a bonus for anyone who's already got the program or an instant resource for anyone who buys it.

• *Breakaway Maths* demo. This is a non-interactive demo showing YITM's latest title, set at the Alton Towers theme park.

Resources

This directory contains the collected modules, fonts and resources needed for some of the demos on the disc. *ArmMovie* is supplied because at least one demo contains Replay files. you can merge the fonts and the modules in *!System* with your own if you wish, but they can be used *in situ*.

Don't try this with *!Scrap*. If you don't already have a *!Scrap* folder, you must copy the one on the CD-ROM to your hard disc or to a write-enabled floppy and then run the copy. If you don't do this, applications will be unable to create temporary files and may crash as a result. Normally, though, you will have a *!Scrap* folder and will have 'seen' it before you start the CD-ROM, so you won't need to take any action.

Credits

This disc was sponsored by Acorn Education, and I'd like to thank John O'Neill, Maureen Wilman and Moira Woodward for checking the content and providing the copy and information. The demos mostly arrived thanks to pestering by Karen Peach, editorial assistant on the magazine, but also because of the hard work of a number of programmers, especially those at AVP, Anglia, YITM and Xavier.

TAG Developments very kindly gave me a beta release of *HyperStudio* to do the hypertext stacks on which was more stable than I had any right to expect, so Dave Miller deserves a round of applause. Neil Critchell and Mark Watson at Eesox displayed endless stoicism in the face of shifting deadlines, as indeed did Alan Capper, Pam Turnbull and Sandra Childs back at IDG.

Finally, whichever god decided to throw a blizzard at me when I was driving through Huntingdon to get the gold disc cut deserves my thanks for making life even more interesting just when it seemed that nothing else could go wrong.

David Matthewman



Questions about the CD-ROM

Q: Why is some of the CD-ROM archived, but not all of it?

A: Sometimes it was necessary to archive applications containing files with names which would have been illegal under the standard for CD-ROMs. However, it is generally preferable to allow applications to run directly from the CD-ROM rather than putting them in Archives, as you then don't need *ArcFS* loaded to run them.

Q: Some of the files on the ftp site have been filetyped as data files but they're actually archives. Why, and what can I do about it?

A: The ISO formatter removes the file types from files with a DOS extension, as many on the site have. If you drag the archives to ArcFS it should be able to load them correctly. Alternatively, copy them to another disc and change the file type. If you are having trouble opening some of the *Spark* archives on the disc using *ArcFS* then copying them to your hard drive first may help.

Q: Where can I get further copies of the CD-ROM?

A: Customer care at Acorn Education – (01223) 254222 – will be happy to send out extra discs if you need them; they will also be available at the BETT show.

Q: Wasn't some of this stuff on the first CD-ROM?

A: Yes, several of the demos were. the reason that they're repeated on this disc is that the disc has to stand on its own as a product, rather than relying to references to and earlier disc.

Q: I'm not in education – does this disc have anything for me?

A: Yes; many of the products in the catalogue have much wider appeal, though obviously a large number *are* aimed at education. Also you should ignore the pricing and ordering in the *DOCS.EDUCATE* directory – that is for education only, and you won't be able to buy at those prices. You may find the odd useful thing on the ftp site as well.

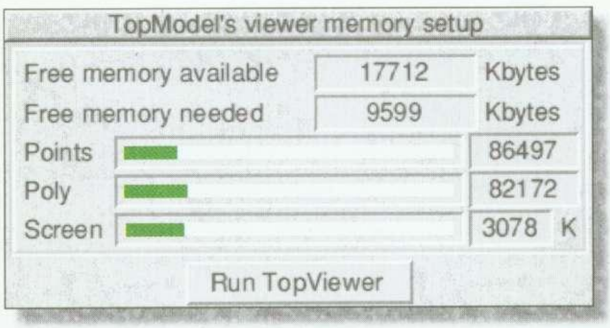
Top Model demo

by Sincronia Soluzioni

TOPMODEL is a high-end graphics package designed to take advantage of the power and Video RAM in a Risc PC, but it will also run at respectable speed on older machines. *TopModel* will run in 2Mb – 4Mb is recommended – and clearly the more powerful the machine, the faster it will run.

Important note: on machines with a version of RISC OS below 3.5 (pre-Risc PC machines) *TMViewer* corrupts the system sprite area, which will crash *SparkFS* and *Memphis* as well as anything else that uses the area, so quit these before running *TMViewer*. You have been warned.

TMViewer is a display-only version of *TopModel*, although it also allows you to create shapes to a limited extent using pre-defined primitives. It should run straight from the archive on disc, but in order to free up as much memory as possible you might want to copy the programs out of the archive on to your hard disc and quit *ArcFS* before running them.



When you start *TMViewer* you can allocate more memory to the various functions – make sure you don't exceed the total for your machine, though.

The first thing to do is to load one of the pre-defined models in the *Objects* directory. *AcornUser* and *Bird* are the largest files, and you may want to load one of the smaller ones to get the hang of *TMViewer*. When you load an object into the viewer, a window opens with two very daunting tool bars – don't worry, when you move the pointer over one of the tools, a description of the tool is displayed in the bottom tool bar. Also, because this is only a demo, most of the tools on the bottom tool bar don't do anything anyway, although you can see what they *would* do in the full version by moving the pointer over them.



The *TopModel* window with its two daunting tool bars.

The tools on the left-hand tool bar all concern the display of the objects loaded – you can zoom, pan, alter the lighting and so on. The bottom icons open up a second, smaller tool bar which allows you to chose how the shapes are to be displayed – wire frame, polygon, with textures and other settings.

As to creating objects from scratch, the only way you can do this in *TMViewer* is using the program's library of objects. To access these, first click on the Create tool (at the bottom left of the bottom tool bar) then on the Library tool (bottom right of the group of 10). A scrollable window containing some objects is displayed; these can be dragged to the main window to be placed.

Further details on *TopModel* and *TMViewer* can be found in the *!Help* files inside *TMViewer*. For more information on *TopModel*, including prices and availability, contact Sincronia Soluzioni Multimediali's international distributor, PC POOL SaS.

PC POOL SaS
Tel/fax (Italy): +39 11 53 91 73
E-mail: pcpool@flower.it

Regular items

Various authors

YOU know what's in this area if you're a regular reader of the magazine, but in case you're new I'll explain that this archive contains programs and files which tie in with regular sections of the magazine.

- The *Education* directory contains the *NetScrap* application detailed on the Network page, three *Draw* files accompanying the review of *Smudge the Scientist* and two *Draw* files explaining how to make tessellating shapes.
- The *RunTheRISC* directory contains programs to go with Mike Cook's hardware article on joypads.
- The *StarInfo* archive contains the programs from the *INFO section of the magazine. These are arranged by author's surname and are all explained in greater detail in this section of the magazine.

Disc information

Various authors

THE software on this disc has been compressed using *ArcFS 2* from VTi. Unlike on previous discs, these are straightforward archives which are opened by running a copy of *ArcFS* and double-clicking on the archive to open it. There is a copy of *ArcFS* on the disc.

Most software will run straight from the archive, but some programs may need to be copied out of the archive before being run, uncompressing them in the process.

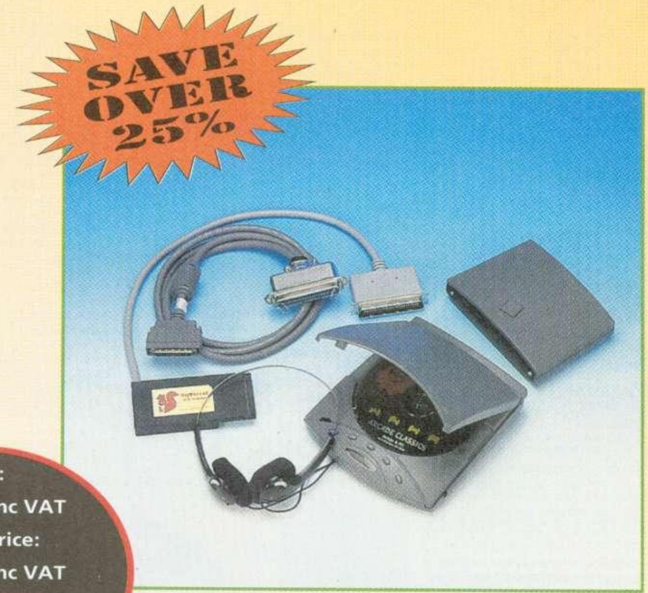


If your disc is faulty, then you should test whether it will verify by clicking with Menu on the floppy drive icon and choosing 'Verify' from the menu. You should then either return it to TIB, TIB House, 11 Edward Street, Bradford, Yorkshire BD4 7BH (if it does not verify or is damaged) or to the editorial office at *Acorn User* (if it verifies).

The *Acorn User* cover disc has been checked for viruses using *Killer* version 2.101 from Pineapple Software.

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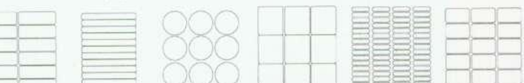
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L7655 89x42mm (12 lps, 25 shts)	Audio Cassette Labels	£11.00	b	£12.93
L7656 46x11.11mm (84 lps, 25 shts)	35mm Slide Labels	£11.00	b	£12.93
L7664 70x71.9mm (8 lps, 25 shts)	3.5" Diskette Wrap Over	£11.00	b	£12.93
L7664H 70x71.9mm (8 lps, 100 shts)	3.5" Diskette Wrap Over	£20.50	b	£24.09
L7665 72x21.15mm (24 lps, 25 shts)	Mini Data Cartridge Labels	£11.00	b	£12.93
L7666 70x52mm (10 lps, 25 shts)	3.5" Diskette Face Only	£11.00	b	£12.93
L7667 133x29.61mm (9 lps, 25 shts)	Standard Data Cartridge	£11.00	b	£12.93
L7670 63.5 Dia (12 lps, 25 shts) FY	Florescent Yellow Circular	£11.50	b	£13.51
L7680 38.1x21.2mm (65 lps, 25 shts)	Mini Addressing Gold	£17.00	b	£19.98
L7690 38.1x21.2mm (65 lps, 25 shts)	Min Addressing Silver	£17.00	b	£19.98
L7170 134x11mm (24 lps, 25 shts)	Eurofolio/Filing Labels	£11.00	b	£12.93
L7171 200x60mm (4 lps, 25 shts)	Lever Arch Labels	£11.00	b	£12.93
L7172 100x30mm (16 lps, 25 shts)	Ring Binder Labels	£11.00	b	£12.93
LASER Mini-Sheets				
L2186 69.9x50.8mm (4 lps, 40 shts)	3.5" Diskette Face Only	£7.50	b	£8.81
L2163 101.6x50.8mm (4 lps, 40 shts)	Parcelling Labels	£7.50	b	£8.81
L2162 101.6x33.8mm (6 lps, 40 shts)	Addressing Labels	£7.50	b	£8.81
L2160 66.8x25.4mm (8 lps, 40 shts)	Addressing Labels	£7.50	b	£8.81
L2164 50x14mm (28 lps, 40 shts)	Suspension File	£7.50	b	£8.81
LASER Clear				
L7551 38.1x21.2mm (65 lps, 25 shts)	Mini Addressing Transparent	£15.00	b	£17.63
L7562 99.1x33.9mm (16 lps, 50 shts)	Addressing Transparent	£25.00	b	£29.38
L7562S 99.1x33.9mm (16 lps, 25 shts)	Addressing Transparent	£15.00	b	£17.63
L7563 99.1x38.1mm (14 lps, 50 shts)	Addressing Transparent	£25.00	b	£29.38
L7563S 99.1x38.1mm (14 lps, 25 shts)	Addressing Transparent	£15.00	b	£17.63
L7565 99.1x67.7mm (8 lps, 50 shts)	Parcelling Transparent	£25.00	b	£29.38
L7575S 99.1x67.7mm (8 lps, 25 shts)	Parcelling Transparent	£15.00	b	£17.63
LASER Business Cards				
L7413 90x50.8mm (10 lps, 25 shts)	Business Cards, Micro Perforated	£15.00	b	£17.63
LASER Name Badges				
L7418K 86.6x55.5mm (8 lps, 3 shts, 10 Holders)	Name Badge & Holders	£17.00	b	£19.98
L7418 86.5x55.5mm (8 lps, 25 shts) Refill Pk	Name Badge	£13.50	b	£15.86
LASER Postcards				
L7421 139.37x97.29mm (4 lps, 25 shts)	Postcards	£16.00	b	£18.80



CABLES & ADAPTORS

Item	Description	Ex Vat		Inc Vat
Mains Lead 3 Pin Moulded 5 amp	Computer or Printer Power Lead	£3.70	a	£4.35
Mains Lead Extension M-F	Computer to Monitor Power Lead	£3.70	a	£4.35
4 Gang Extension	1 Mains Socket converted to 4, Fused	£6.50	b	£7.64
Parallel Printer Cable 1.8M	Normal Printer Cable PC/Acorn/Atari etc	£2.55	a	£3.00
Parallel Printer Cable 3M	Normal Printer Cable PC/Acorn/Atari etc	£4.55	b	£5.35
Parallel Printer Cable 5M	Normal Printer Cable PC/Acorn/Atari etc	£6.50	b	£7.64
Bi-Directional Parallel Printer Cable	Fast Data Transfer Cable	£11.00	a	£12.93
Centronics - Centronics Cable 2M	Switch Box Cable	£4.28	a	£5.03
Centronics - Centronics Cable 3M	Switch Box Cable	£6.50	a	£7.64
Serial Cable 2M 25 Pin M-F	All Pins Connected/Printer Cable	£4.28	a	£5.03
Serial Cable 5M 25 Pin M-F	All Pins Connected/Printer Cable	£8.50	b	£9.99
Laplink Cable 1.5M 25&9F-25&9F	Data Transfer Cable Null Modem (X-Over)	£8.50	a	£9.99
Midi Leads (Pair)	Music Data Transfer Cables 5 Pin Din	£8.00	a	£9.40
Phono Leads (Pair)	2xPhono Transfer/Extension Cable	£3.50	a	£4.11
Phono to Stereo Jack Convertor	3.5mm Stereo Jack to 2xPhono Plugs	£3.00	a	£3.53
VGA/SVGA Monitor Extension Cable 2M	15 Pin HD M-F	£6.50	a	£7.64
Keyboard Extension Cable 2M	Curly 5 Pin Din M-F Standard PC Keyboard	£6.50	a	£7.64
Keyboard Extension Cable 2M PS2	Curly PS2/Risc PC M-F Keyboard Ext	£6.50	a	£7.64
Mouse Extension Cable 2M	9 Pin D Type M-F Extender Cable	£6.50	a	£7.64
Joystick Extension Cable 2M PC	15 Pin D Type M-F Extender Cable	£6.50	a	£7.64
Joystick Splitter	Allows the Use of 2 Joysticks on a PC	£8.50	a	£9.99
A3010/3020/4000/5000 - Scart Lead 1.5M	15 Pin HD D Type to Euroscart (Not Sony)	£8.50	a	£9.99
A3010/3020/4000/5000 - CM8833 MKI	15 Pin HD D Type - 9 Pin	£8.50	a	£9.99
A3010/3020/4000/5000 - CM8833 MKII	15 Pin HD D Type - 9 Pin & Phono Leads	£8.50	a	£9.99
A3010/3020/4000/5000 - AKF17 & AKF30	15 Pin HD D Type - 9 Pin	£8.50	a	£9.99
SCSI 25 Pin D - Centronics	SCSI Interface to External Box/CD or HD	£12.00	b	£14.10
SCSI 50 Way IDC Ribbon Cable 1M	Internal SCSI Cable (Can be Custom made)	£ ASK	a	£ ASK
SCSI Centronics to Centronics 1M	External Daisy Chaining/Switch Box Cable	£14.00	b	£16.45
IDE 40 Way Cable 15" for 2 Hard Drives	Internal for 2x3.5" IDE Hard Drives or CD's	£3.00	a	£3.53
IDE 40 Way Sub Miniature Cable	Internal Cable for 2.5" IDE Hard Drive 6cm	£8.50	a	£9.99
IDE 40 Way Sub Miniature Cable Short	As above but only 4cm long (A1200, etc)	£7.00	a	£8.23
Panasonic CD Ribbon Cable 40 Way	Internal Cable for CD ROM to Interface	£3.00	a	£3.53
Panasonic CD Audio Cable	CD to Soundcard/Interface for Audio CD's	£3.00	a	£3.53
Sony CD Ribbon Cable 34 Way	Internal Cable for CD ROM to Interface	£3.00	a	£3.53
Sony CD Audio Cable	CD to Soundcard/Interface for Audio CD's	£3.00	a	£3.53
Mitsumi CD Ribbon Cable 40 Way	Internal Cable for CD ROM to Interface	£3.00	a	£3.53
Mitsumi CD Audio Cable	CD to Soundcard/Interface for Audio CD's	£3.00	a	£3.53
2xFloppy Disk Drive Ribbon Cable	Internal Floppy Disk Drive Cable 3.5"/5.25"	£3.00	a	£3.53
Power Cable Splitter 5.25" or HD/CD 2-1	Splitter to add an Extra 4 Pin Power Lead	£3.25	a	£3.82
Power Cable Splitter 3.5" 2-1	As above but for 3.5" Floppy Disk Drives	£3.25	a	£3.82
PS2 Keyboard Adaptor	Converts Std 5 Pin Din Keyboard to PS2	£3.50	a	£4.11
PS2 to 5 Pin Keyboard Adaptor	Converts PS2 Keyboard to Std 5 Pin Din	£3.50	a	£4.11
PS2 Mouse Adaptor	Converts Serial 9 Pin Mouse to PS2	£3.50	a	£4.11
Dongle Dangle 6cm	For use on Restricted Access Computers	£8.00	a	£9.40

For other cables not listed or specialist cables, please call with specification and we'll make it for you.

Schools & Networking Section

NEW

Education Specialists

TRADE IN DEALS
for Schools & Teachers

Our PC's are built to very high and exacting standards to take advantage of todays Multi Media applications.

KCS are offering any school or teacher that wants to upgrade from an old acorn computer to a new Multi Media PC, the chance to do so at unbelievably low prices. We can take one Acorn or an entire network of them in Part Exchange. As budgets get smaller and resources, tighter. The Multi Media PC's offer an excellent way of utilising your IT budget to maximum effect.

All PC's for schools now come supplied with Iniguard Protect, which is a program that makes Windows a captive system. This means that the transition from Acorn to PC is as painless as possible. Iniguard Protect will stop any unauthorised access to the computer and ensure that the PC gives years of trouble free performance.

We are able to offer finance for single machines and leasing for several machines, we can even incorporate the network installation costs into the lease if you require.

KCS, with a wealth of experience in school networks and Multi Media machines are now best placed to serve your needs, please call or fax your requirements and we'll show you how we can be extremely competetive yet show excellent support when you need it most, in I.T.



DX2 - 66 - 256k Cache
4Mb Ram
560Mb Hard Drive
VLB 1Mb Graphics Card
VLB Enhanced I/O
1.44Mb Floppy
14" SVGA Colour Monitor
UK Keyboard
Mouse
Twin Speed CD ROM
16 Bit Stereo Soundcard
Dos & Windows
Encarta 95
Microsoft Works

SRP £800
Teacher £780
School £770

DX4 - 120 - 256k Cache
8Mb Ram
560Mb Hard Drive
VLB 1Mb Graphics Card
VLB Enhanced I/O
1.44Mb Floppy
14" SVGA Colour Monitor
UK Keyboard
Mouse
Quad Speed CD ROM
16 Bit Stereo Soundcard
Dos & Windows
Encarta 95
Microsoft Works

SRP £965
Teacher £925
School £900

School Network SERVER

Dealer enquiries welcome.

KCS have developed the KCS NetServer system for entire school network management.

The NetServer utilises the advanced Networking and security features of Microsoft Windows NT environment and the recently launched Arcshare, Acorn to PC networking software.

The NetServer will allow Acorn computers to talk to PC computers and Macintosh at the same time on the same network. Files and printers can be shared no matter were they are on the network. The high performance nature of the two models of NetServer are ideal for fileserving in establishments that require a high level of useability and integrity.

NetServer 1000

100Mhz Processor, 24Mb RAM, 1Gb IDE Hard Drive, Quad Speed CD ROM, Windows NT 3.5x, 1.44Mb Floppy, PCI Graphics Card, MPR2 Colour Monitor, 100Mbit PCI Network Card.

Free Installation — *£2750.00*

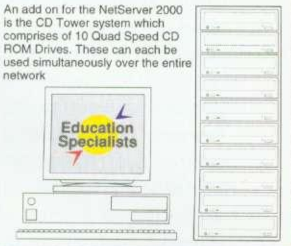
NetServer 2000

100Mhz Processor, 32Mb RAM, 2Gb SCSI Hard Drive Stripe Set, Quad Speed CD ROM, Windows NT 3.5x, 1.44Mb Floppy, PCI Graphics Card, MPR2 Colour Monitor, 100Mbit PCI Network Card 2Gb DAT Backup Unit.

Free Installation — *£4250.00*

Using the NetServer at the heart of a network enables easy network management in one machine with access to Macs, Acorns, PC's, and even Unix systems. The real beauty about this system is that the "Client" machines don't notice anything different about the network, as Arcshare and Windows NT effortlessly blend together to give full control and file manipulation.

An add on for the NetServer 2000 is the CD Tower system which comprises of 10 Quad Speed CD ROM Drives. These can each be used simultaneously over the entire network



Arcshare™

Acorn to PC Networking Software

Dealer enquiries welcome.

Version 2 now available. Includes Printing Facility

ArcShare

Arcshare is an Acorn to PC networking packages which makes the PC behave as if it was an Acorn Access system. This allows fast easy transfers of data from or to either machine via a simple to control interface on the PC. The Acorn on the other hand needs no special software other than Access. The Acorn is then able to see all the files on the PC just like any other networked drive, whats more, all the files stored on the PC have the correct filetype, so they can be loaded and used straight away.



Available Now, no special hardware required.

Arcshare Server 1.4 £99 & Vat

MULTI - MEDIA KITS

	Ex Vat		Inc Vat
Twin Speed IDE CD ROM	£50.00	d	£58.75
Twin Speed External CD ROM	£175.00	d	£205.63
Quad Speed IDE CD ROM	£110.00	d	£129.25
Twin Speed SCSI CD ROM	£110.00	d	£129.25
Quad Speed SCSI CD ROM	£160.00	d	£188.00
External CD Box & PSU	£65.00	c	£76.38

MONITORS

	Ex Vat		Inc Vat
14" SVGA Monochrome	£79.00	d	£92.83
14" SVGA 0.39 Colour	£150.00	d	£176.25
14" SVGA 0.28 MPR2 Colour	£165.00	e	£193.88
15" SVGA 0.28 MPR2 Colour	£250.00	e	£293.75
17" SVGA 0.28 MPR2 Colour	£490.00	e	£575.75
20" SVGA 0.31 MPR2 Colour	£735.00	e	£863.63
Acorn AKF53 Med Res Colour	£235.00	e	£276.13
Acorn AKF60 Hi Res Colour	£295.00	e	£346.63
Acorn AKF85 As Above, 17"	£690.00	e	£810.75

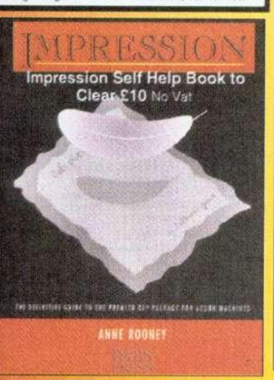
CD ACCESSORIES

	Ex Vat		Inc Vat
CD Caddy Holder	£5.00	a	£5.88
CD Disk Cleaner	£2.98	b	£3.50
CD Tray Flipper Holds 20	£2.55	b	£3.00
Empty CD Jewel Case	£0.50	a	£0.59
CD Protector Rings (Pack of 5)	£1.50	a	£1.76

ACORN Software

	Ex Vat		Inc Vat
10 out of 10 Software All Titles	£16.90	a	£19.86
1st Word Plus	£17.50	a	£20.56
Arc Comm2	£35.00	a	£41.13
Artworks CD Ver	£130.00	a	£152.75
Avery Label Templates	£5.00	a	£5.88
Black Angel	£22.98	a	£27.00
Borders for Impression 1	£8.51	a	10.00
Borders for Impression 2	£8.51	a	£10.00
Canon Fodder	£18.48	a	£21.71
Crystal Maze	£24.00	a	£28.20
The Crystal Rain Forest	£35.50	a	£41.71
Dataword	£11.91	a	£13.99
Dune II	£28.50	a	£33.49
Easiword v2	£25.00	a	£29.38
Easyfont 3	£25.00	a	£29.38
Euclid 2	£25.00	a	£29.38
Midnight Graphics Express	£15.00	a	£17.63
Guile	£18.00	a	£21.15
Labeller	£7.00	a	£8.23
Magic Pockets	£19.50	a	£22.91
Micro English	£18.00	a	£21.15
Micro French	£18.00	a	£21.15
Micro German	£18.00	a	£12.15
Pendown Etoiles	£41.70	a	£48.99
Pendown Plus	£68.00	a	£79.90
Pinpont	£45.00	a	£52.88
Pinpoint 2	£65.00	a	£76.38
Pipedream 4	£80.85	a	£95.00
Quest for Gold	£12.00	a	£14.10
Simon the Sorcerer	£28.00	a	£32.90
Tech Writer 2	£125.00	a	£146.88
Tower of Babel Comp.	£21.28	a	£25.00
Wolfenstein 3D	£22.00	a	£25.85
Wordz	£50.00	a	£58.75
Worra Cad	£65.00	a	£76.38
Xenon 2	£18.00	a	£21.15
Zool (1.44MB HD Only)	£14.00	a	£16.45

Huge range of Software available, call for list.



ACORN UPGRADES

	Ex Vat		Inc Vat
4-8 MB Up. (310,440,400/1)	£249.00	c	£292.57
4-8 MB Up. (A3000/5000)	£249.00	c	£292.57
Arm 3 (A3000/400) & FPA Socket	£114	c	£133.95
Arm 3 As above with FPA.	£179.00	c	£210.32
FPA Upgrade for A5000/540	£79.00	c	£92.82
A3010 1-2 MB Upgrade	£45.00	b	£52.87
A3010 2-4 MB Upgrade	£89.00	c	£104.57
A3010 1-4 MB Upgrade	£132.00	c	£155.10
A3020/4000 2-4 MB Upgrade	£83.00	b	£97.52
A5000 2-4 MB Upgrade	£79.00	b	£92.82
A3000 1-2 MB Upgrade	£52.00	b	£61.10
A3000 1-4 MB Upgrade	£114.00	c	£133.95
A3000 Serial Port Upgrade	£19.00	b	£22.32
A310 4Mb Upgrade	£137.00	c	£160.97
Risc OS Carrier Board (A310)	£22.00	b	£25.85
MEMC 1A Upgrade Kit	£29.00	b	£34.07
A400/1 1Mb Upgrade per meg	£45.00	b	£52.87
Risc OS 3.1 Up. Rom & Books	£75.00	d	£88.12
Midi Expansion Card	£79.00	c	£92.82
CD ROM Drives SCSI	£POA	d	£POA
CD ROM Drives IDE	£POA	d	£POA
Scanlight Junior Handheld	£175.00	d	£205.62
VIDI Archimedes	£55.00	d	£64.62
Hard Drives (int) A3010/3020			
A3010 HD Interface	£69.00	d	£81.07
A3010 HD Int.Face & User Port	£79.00	d	£92.83
85Mb Hard Drive 2.5" IDE	£85.00	d	£99.88
120Mb Hard Drive 2.5" IDE	£95.00	d	£111.63
170Mb Hard Drive 2.5" IDE	£100.00	d	£117.50
210Mb Hard Drive 2.5" IDE	£130.00	d	£152.75
340Mb Hard Drive 2.5" IDE	£160.00	d	£188.00
Hard Drives (int) A4000/5000			
420Mb Hard Drive 3.5" IDE	£105.00	d	£123.38
560Mb Hard Drive 3.5" IDE	£125.00	d	£146.88
520Mb Hard Drive 3.5" SCSI	£175.00	d	£205.63
1Gb Hard Drive 3.5" SCSI	£245.00	e	£287.88
Hard Drives (ext) A3000			
-A3000 Req Interface & Case:			
A3000 IDE Interface Podule	£69.00	d	£81.07
A3000 Hard Drive Case	£65.00	d	£76.38
210Mb Hard Drive 3.5" IDE	£85.00	d	£99.88
420Mb Hard Drive 3.5" IDE	£105.00	d	£123.38
560Mb Hard Drive 3.5" IDE	£125.00	d	£146.88
Acorn Original Mouse	£25.00	b	£29.38
KCS Replacement Mouse	£12.00	b	£14.10



Novelty Mouse Mats	Ex Vat		Inc Vat
Hamburger	£3.56	a	£4.18
Pig	£3.56	a	£4.18
Clown	£3.56	a	£4.18
Ladies Top	£3.56	a	£4.18
Male Torso	£3.56	a	£4.18
Football	£3.56	a	£4.18
Cat	£3.56	a	£4.18
Mouse	£3.56	a	£4.18
Pen	£3.56	a	£4.18
Car	£3.56	a	£4.18
Motorbike	£3.56	a	£4.18
Frog	£3.56	a	£4.18
Cosmic Rings Screen Saver Set	£9.00	a	£10.58
Battlescape Screen Saver Set	£9.00	a	£10.58

INTERNET

Heard the latest "Buzz" word from the Computer World?

Want to get connected to the rest of the World for the price of a local phone call?

Want your own EMAIL address?

We'll show you how, and provide all the information and software you need, be it for the Acorn or the PC. Call now and speak to our technical staff who will be happy to advise on the best type of modem, who provides the services and who is the best priced on the market.

office data®

Copy Holders	Ex Vat		Inc Vat
Paperclip - Monitor Arm	£4.26	b	£5.00
Copytravel - Portable	£4.26	b	£5.00
Copyplus Desktop	£7.50	b	£8.81
Copyplus Solid Base	£12.00	c	£14.10
Copyplus Flexible Arm	£12.72	c	£14.95
Copyplus A3 Extension Kit	£7.00	b	£8.23
Various Accessories			
Ergo Mouse Pad - Hard Mat	£4.26	b	£5.00
Ergo Mouse Tray & Wrist Rest	£6.00	b	£7.05
Mouse/Scanner Holder	£2.50	b	£2.94
Novelty Cat Mouse Holder Red	£2.50	b	£2.94
Novelty Cat Mouse Holder Black	£2.50	b	£2.94
Novelty Cat Mouse Holder Grey	£2.50	b	£2.94
Wildlife Mouse Mat	£4.00	a	£4.70
Wildlife Wrist Rest	£4.50	b	£5.29
Dinosaur Mouse Mat	£4.00	a	£4.70
Dinosaur Wrist Rest	£4.50	b	£5.29
Combo Pad Thick Mouse Mat	£5.25	b	£6.17
Keyboard Extenders	£16.00	d	£18.80
Keyboard Calculator	£4.26	a	£5.00
Keyboard Station (PC)	£15.90	d	£18.68
Wrist Support Fabric	£3.00	b	£3.52
Wrist Support Plastic	£4.90	b	£5.76
Disk Porter Ring Binder 3.5"	£4.26	b	£5.00
Disk Clips (3) Ring Binder 3.5"	£3.25	a	£3.82
Disk Pocket Leatherette holds 6	£6.00	b	£7.05
Disk Mailer holds 6 Reuseable	£3.50	a	£4.11
Monitor Swivel Stand 12-14"	£14.00	d	£16.45
Universal 2 Pce Printer Stand	£3.00	c	£3.52
As Above with Printout Tray	£6.50	d	£7.64
Stax 132 Column Printer Stand	£13.00	d	£15.28
Monitor Filters			
Economy Glass Filter 14"	£18.40	d	£21.63
Economy Glass Filter 15"	£21.50	d	£25.26
Economy Glass Filter 17"	£65.00	e	£76.38
Light Glass Screen Filter 12-15"	£56.00	e	£65.80
Dark Glass Screen Filter 12-15"	£66.00	e	£77.55
Privacy Filter 60% View 12-15"	£85.00	e	£99.88

INKJET & LASER PAPER/OHP's

	Ex Vat		Inc Vat
Iridium Laser/Inkjet Paper 100 grm A4 500 shts	£6.00	d	£7.05
Iridium Laser/Inkjet Paper 100 grm A3 500 shts	£14.00	d	£16.45
Laser Plus Laser/Inkjet Paper 90 grm A4 500 shts	£5.10	d	£5.99
Laser Plus Inkjet Coated Paper for Colour Printing A4 200 shts	£16.00	d	£18.80
Premier Matt Coated Inkjet Paper for Colour Printing A4 200 shts	£14.00	d	£16.45
Premier Matt Coated Inkjet Paper for Colour Printing A4 50 shts	£5.00	b	£5.88
Hewlett Packard Glossy Paper 51636J A4 50 shts	£41.00	b	£48.18
Premier Gloss Coated Inkjet Paper for High Quality Colour Printing A4 50 shts	£35.00	b	£41.13
Premier Gloss Coated Inkjet Paper for High Quality Colour Printing A4 20 shts	£16.00	b	£18.80
Canon LC-101 Coated Inkjet Paper for Colour Printing A4 200 shts	£18.00	d	£21.15
Canon LC-101 Coated Inkjet Paper for Colour Printing A3 100 shts	£41.00	d	£48.18
Epson Coated Inkjet 720 DPI For High Quality Colour Printing (Stylus) A4 200 shts	£19.00	d	£22.33
Epson Coated Inkjet 360 DPI For Colour Printing on Stylus Colour A4 200 shts	£17.00	d	£19.98
Premier Inkjet Transparencies for Overhead Projectors A4 50 shts	£30.00	b	£35.25
Premier Inkjet Transparencies for Overhead Projectors A4 20 shts	£15.00	b	£17.63
Hewlett Packard Inkjet Transparencies for Overhead Projectors 51636G A4 50 shts	£40.00	b	£47.00
Avery Inkjet Transparencies for Overhead Projectors A4 50 shts	£34.00	b	£39.95
3M Laser Transparencies for Overhead Projectors A4 50 shts	£25.00	b	£29.38
Premier Laser Transparencies for Overhead Projectors A4 50 shts	£25.00	b	£29.38
Premier Laser Transparencies for Overhead Projectors A4 20 shts	£12.50	b	£14.69

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Email us at info@kcsprem.demon.co.uk

RISC PC UPGRADES

	Ex Vat		Inc Vat
Risc PC 1MB VRAM	£70.00	b	£82.25
Risc PC 2MB VRAM	£189.00	c	£222.08
Risc PC Extra Slice & PSU	£99.00	d	£116.33
Risc PC Extra Slice (no PSU)	£49.00	d	£57.58
Risc PC Heavy Duty Keyboard	£64.00	d	£75.20
Risc PC Keyboard Extension	£6.50	b	£7.64
Risc PC Mouse Extension	£6.50	b	£7.64
Risc PC Mouse Mat (Rare)	£4.00	b	£4.70
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ArcComm Software	£35.00	b	£41.13
Modem Cable	£8.50	b	£9.99

Opening Hours

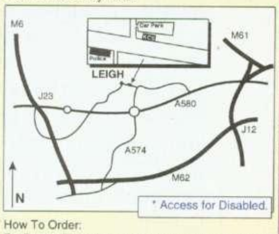
Monday		9am-6pm
Tuesday		9am-6pm
Wednesday		9am-6pm
Thursday	Late Night	9am-8pm
Friday	Late Night	9am-8pm
Saturday		9am-6pm
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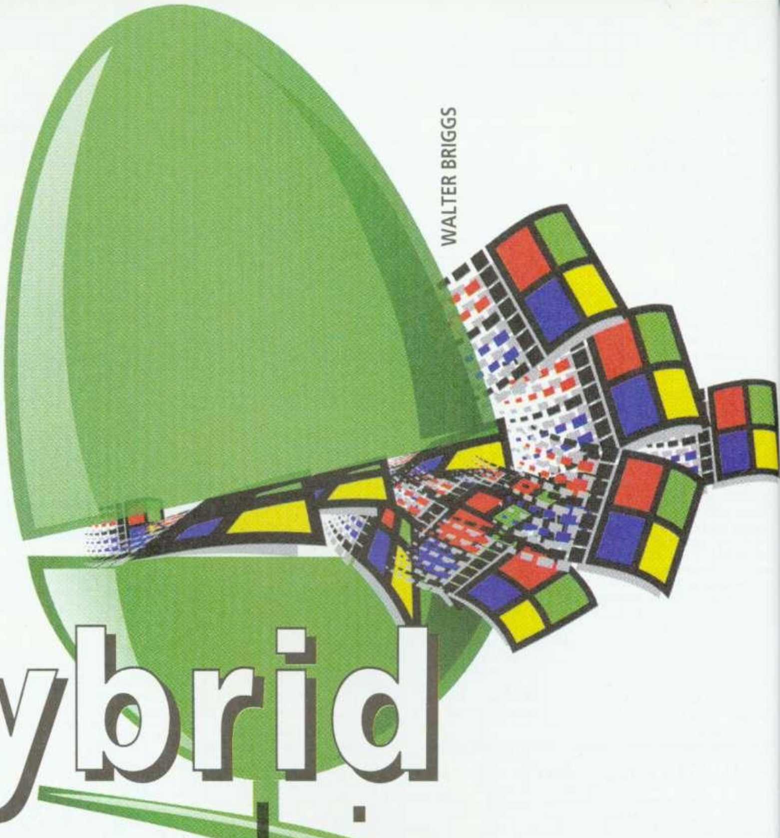
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FEATURE



WALTER BRIGGS

So, you want a PC but don't want to go out and buy another machine? David Matthewman examines the options.

Hybrid machines

The Tube is a connector and software interface which permits very high-speed communication between the BBC computer and a second processor. The 'Second Processor' is another computer system in its own right, but one that uses the BBC computer for all its time-consuming input/output operations.
The BBC Microcomputer User Guide (1982)

Connecting other computer systems to your Acorn is not a new idea. The BBC Micro had this mysterious port on its underbelly called the Tube to which, according to legend, all manner of exciting and alien boxes could be attached to boost the performance of your machine. I even had one myself – the Torch Z80 which ran some hideous operating system called CP/M (whatever became of that?). The way it worked was basically to hijack the BBC's keyboard, speaker and monitor when running.

This philosophy lay dormant in the Archimedes – although a partial solution existed in the Podule slots – but re-surfaced with a vengeance in the Risc PC. This had, as an integral part of its design, a co-processor slot dedicated to running a second processor in the machine. This processor shares everything – memory, parallel and serial ports, hard disc, the lot – and so avoids unnecessary duplication; it's also cheaper.

Software solutions

When the Archimedes first appeared, it was so blindingly fast that the obvious solution to PC compatibility was to write a software emulator. This program, *PCSoft* by Acorn, emulated a 4MHz 640K 8088 PC with reasonable accuracy. Unfortunately, this quickly became obsolete in the PC world and, although with an ARM3 the emulator could be pushed close to 8MHz, and various upgrades gave CD-ROM compatibility, limited VGA graphics and extended memory support, real-life PCs quickly outstripped this.

PCSoft's one big flaw was in graphics performance, which was very slow indeed. Even playing *Tetris* on it was an exercise in boredom rather than a battle of hand-eye co-ordination. Seeing this, Dave Lawrence (not he of *INFO fame, another one) wrote an alternative emulator called *FasterPC* which sacrificed some of the frills of *PCSoft* for much better graphics performance and sound handling. For older PC games this was an excellent choice, and *Faster PC* is still available from APDL, price £20.

Podule cards

Anything requiring a 386 or even a 486 to run was clearly going to require something more than a software emulation, though. Aleph One therefore developed a number of expansion cards which plugged into the podule slot on the Archimedes and contained *bona fide* 386 and 486 chips. These have got progressively faster, and today the range runs right up to a 486DX2/80 clocked at 80MHz.

Software compatibility problems with these are much less than with the software emulators. Any problems are limited to interfacing with the Archimedes hardware – sound and video being particular problems. Don't expect these cards to run at full speed for this reason; the podule bus on an Archimedes can't cope with the rate of data transfer needed by a 486DX2/80 running SVGA graphics at full speed. This is an insurmountable problem on the older machines – however fast the processor runs, it's always fighting against the relatively slow rate of data transfer between the Archimedes and the podule card.

The other problem with these cards is that they can't share memory with the main computer. This does have its advantages as well; they don't rely on having an Archimedes with masses of memory (16Mb Arcs are rare) and the processor doesn't have to communicate with the memory across the podule bus. However, it is a lot more expensive.

Cards currently in the Aleph One range are the 80MHz 486DX2/80 at £399 + VAT and the 40MHz 486DX-40 at £349 + VAT. Older cards are available at cheaper prices, but avoid the 25MHz cards if you want to run Windows – they're not really up to it.

386 and 486 cards were also manufactured for the A3020 and A4000 machines – these sat on mini-podules and had 25MHz chips on them. Although slow by modern PC standards, they are the only cards available for these machines. Until recently they were being sold by Acorn – if your local dealer doesn't have one you may be able to pick one up second hand.

Co-processors

That about covers the pre-Risc PC solutions. The Risc PC, as mentioned above, introduced a novel and far better solution; the co-processor. This shared memory and other hardware with the ARM processor in the Risc PC making it not only a cheaper solution, but a faster one too.



The first card to take advantage of this – a 40MHz Texas Instruments 486SXL-40 actually clocked at 33MHz – broke the price barrier by being sold at £99 + VAT with the Risc PC, or £199 + VAT if bought separately. This is still available and offers reasonable bottom-of-the-range performance, say about a 25MHz PC. There are now faster alternatives from Acorn:

- DX2-66 card clocked at 66MHz for £249+VAT

- DX4-100 card clocked at 100MHz for £299 + VAT

and the following from Aleph One:

- DX2/80 card for £399 + VAT
- Pentium-class Cyrex 586 chip for £549 + VAT.

The DX2/80 from Aleph One has now really been superseded by the Acorn DX4-100 card, although the review this issue has been kept in because it provides a useful guide to the speeds being achieved by the cards now. Basically, the technology is moving faster than we can review it at the moment – already there is a Blue Lightning 586 chip from Acorn promised for release at BETT for £499 + VAT. P75 (though not yet P90) performance is being approached.

None of the cards uses Intel processors (hence '586' not the trademarked 'Pentium'), so as far a processors are concerned Acorn owners can claim a Pyrrhic victory by keeping Intel Outside.

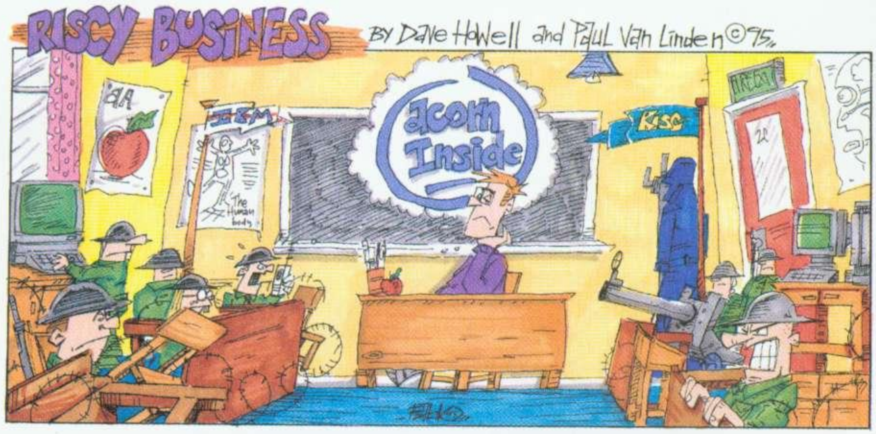
Owners of the original 33MHz card will have an upgrade path to faster Acorn cards. Although prices had not been fixed at the time of writing, Acorn is keen to reward original purchasers of the card, so expect discounts to be generous. It is also possible that Acorn will be offering its faster cards at a discount when bought with the Risc PC; it does not do this at the moment, but an announcement is promised for BETT.

Early versions of the *486* emulator software supplied with the cards had palette problems with 256-colour modes – these have largely been fixed in the latest release of the software, now called *x86* and into version 1.91 already. Another recent innovation is Acorn's *PCExchange* utility which allows drag-and-drop transfer of files between the Acorn Desktop and the Windows clipboard, with automatic conversion of common file types.



The biggest incompatibility with the co-processor in the Risc PC is that of sound. Windows sound is available – allowing the machine to play WAV files – either by connecting the sound pins on the card to the connector on the Risc PC motherboard using drivers with 16-bit machines, or using Desktop Laminations' AudioMan speaker and microphone which connects to the parallel port.

A considerably enhanced version of AudioMan offers full 16-bit stereo sound and SoundBlaster emulation from DOS, but there are still problems getting this to work with the card. Similar products may work, but at the moment I'm not aware of one which completely solves the problem.



SoundBlaster emulators for Risc PCs with 16-bit sound have been rumoured for ages, but none has appeared yet. This is a huge blow to games players and users of many multimedia titles which don't work to their full potential without SoundBlaster support.

PC hardware cards

What you'd like to do is to buy a SoundBlaster card and plug that into the expansion slots. Obviously it won't fit, but there is a solution, or there soon will be.

Atomwide is about to release a useful piece of hardware called the ISAdaptor. This plugs into a standard podule slot and allows you to connect ISA-standard cards to your Archimedes. There are several versions – by far the neatest is an extra slice for your Risc PC which can support up to two cards, but there's also a stand-alone box which takes up to seven.

The extra-slice option costs £269 + VAT and the stand-alone box £299 + VAT so in terms of initial outlay this is an expensive upgrade. However, the ISA cards themselves are all much cheaper than their Acorn equivalents and include many (like an internal modem) that have *no* Acorn equivalent.

These cards can be accessed from the PC cards (both the co-processors in the Risc PC and the older podule cards) as though they were accessing standard PC hardware. Not only that, but with suitable drivers they can be accessed from RISC OS. A SoundBlaster driver already exists, and others may follow.

Networking

One reason for having a PC card in your machine might be to connect to a PC network. This is easily possible from the PC side of things using network drivers from Aleph One if you have an Ethernet card in your machine; the PC card shares the Ethernet card with RISC OS.

Should you wish to connect your Archimedes to a PC network you can do so using Acorn's *OmniClient*, (£249 + VAT) which allows RISC OS to have an Ethernet connection to any LANManager, NTserver, Windows for Workgroups or NFS networks, as well as the standard RISC OS solutions.

KCS's *ArcShare* approaches the problem from the other end, being a PC program which allows a PC on an Ethernet network to use the standard Acorn Access protocols. this is certainly the preferred solution for attaching a PC to an existing Acorn Access network and, being at £99 + VAT considerably cheaper than *OmniClient*, should certainly be considered even for larger PC networks. AU

Contact details

Acorn (various products)
Tel: (01223) 254222 for your nearest Acorn dealer.

Aleph One (PC cards and network software)
Tel: (01223) 811679
Fax: (01223) 712713
E-mail: sales@aleph1.co.uk
WWW: http://www.ant.co.uk/com/aleph1/

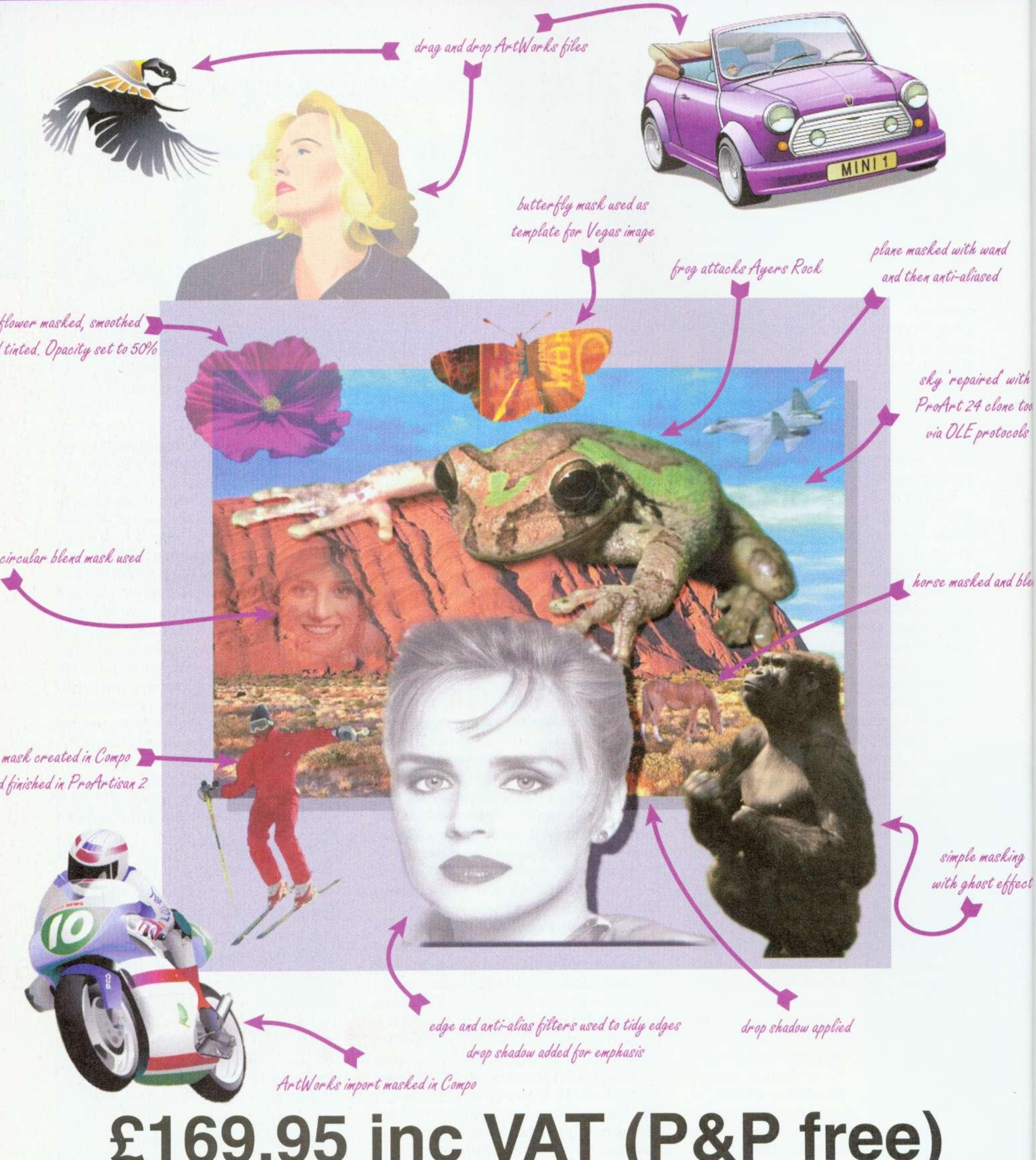
APDL (FasterPC)
Tel: 0181-778 2659

Atomwide (ISAdaptor)
Tel: (01689) 814500
Fax: (01689) 814501
E-mail: sales@atomwide.co.uk
WWW: http://www.ant.co.uk/com/atomwide/

Desktop Laminations (AudioMan)
Tel: 01179-979 9979

Kimberley Computing Services (ArcShare)
Tel: (01942) 677777
Fax: (01942) 682300
E-mail: sales@kcsprem.demon.co.uk

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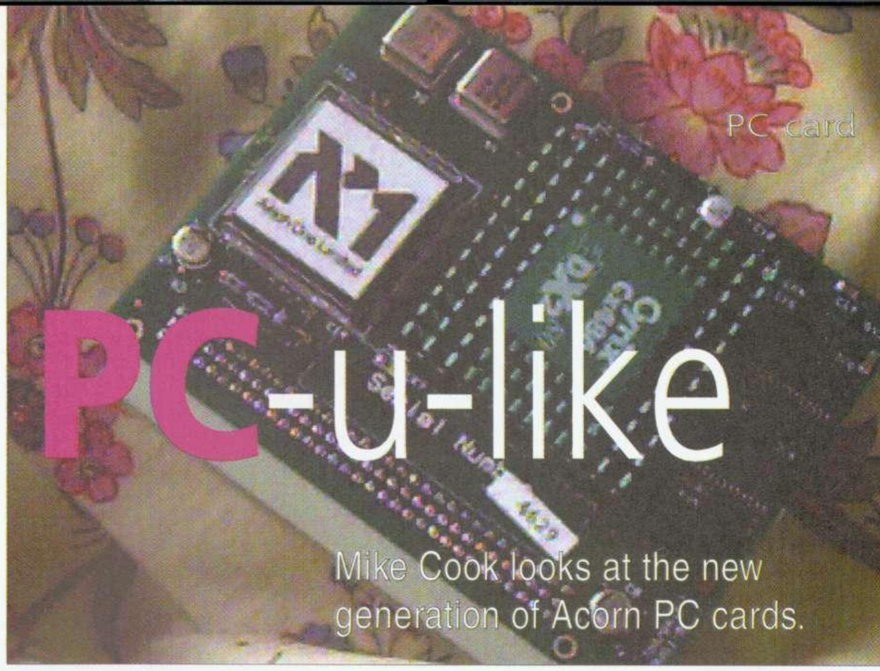
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EXCLUSIV



PC-u-like

Mike Cook looks at the new generation of Acorn PC cards.

It seems that there were two reactions to Acorn's original 486 processor card – you either loved it or hated it depending upon your expectations. I was unfortunately in the latter camp as I had been promised by Acorn when I went to the pre release view of the Risc PC that it would be indistinguishable from a PC's. Well we now know that not to be the case, with lack of support for sound or all but the crudest graphics, specially under DOS.

It's the lack of proper support for DOS graphics that is my main disappointment. That fortunately is starting to improve and the DX2/80 Second Processor card from Aleph One is another step towards PC compatibility. To be fair Aleph One produced the original Acorn design but they only worked to Acorn's specification which they admitted to me was *rather poor*.

New kid on the blocks

The new package comes in two parts, the driving software V1.9b and the hardware board itself. The software is a considerable improvement and can automatically detect between the DX2 chip and the original Acorn design. It includes a power down module that you can include in your boot file to save burning large amounts of energy when you want to do only real (non PC) work.

It also contains palette support for Windows as well as the ability to use any RISC OS screen mode under Windows (memory permitting). There is also support for sharing the serial and parallel port between Windows and RISC OS, useful if you have dongles installed.

While it does not officially support Windows 95 it can be persuaded to run with a few changes in the slower VGA mode with 16 colours.Well, what about the hardware? Not much to say here except that it's faster. But how fast is faster?

Lies and statistics

There are all sorts of bench marks that are available to give speed numbers to various functions of a computer but these should be treated with caution. I know that it is relatively easy to devise a set of bench marks that show your system to advantage and a rivals to disadvantage. So before I embarked on testing I did a few real tasks armed with a stopwatch as computer timing can cheat.

The DX2 processor has a built-in floating point processor and a write-back cache. This means it not only stores data from the main memory but also allows the processor to write into it.

This minimises the relatively slow accesses to the main memory. Therefore, this processor should be faster at doing sums and also applications that access a small amount of memory a lot of times. However processes that have a lot of disc or CD access should see little or no improvement.

I use the Magic Eye CD to generate some sterograms, it's a sort of multimedia application with a virtual reality interface. There was no difference in the setup or the wandering around but the generation of the sterograms were dramatically improved.

While it took a painful 17 minutes 12 seconds on the original processor, on this new one it took a just acceptable 1 minute 6 seconds. That's a speed up of over 15 times! There was also some CD access during that time to fetch the images in so this is underselling the raw speed increase.

Next I went to the PD ray tracing package POV, a simple, small, 100x100 scene took 1 minute 19 seconds on the old processor and just 4 seconds on the new one – a speed up of nearly 20 times. Fractal generation did not speed up as much as I thought giving only 3 times improvement for the few I tried. However this was under DOS and the screen drivers absorb most of the power here.

Processing data from NASA's Ozone CDs showed very little improvement as did a game of *Sim Earth*. I think *Sim Earth* has a software timer to control the speed of the simulation. All in all in these *real world* tests the new card showed either no improvement or quite dramatic improvement. Now to the bench mark tests, there are basically Windows bench marks that take a random selection of calls to routines known to be used in various types of applications, as such they are quite artificial.

Here the bigger the number the better the processor. In order to give you a feel for *real PCs* I have included the timing for a number of other machines. The numbers are normalised so that a standard 486 PC should give a value of 1. As you can see the DX2 holds its head up quite well except for the PC with the accelerated graphics display.

Note here the difference in timing between using the standard VGA windows driver and the ARM driver. As has been known for a long time Windows soaks up processor power in return for a graphics interface. AU

Product details

Product: DX2/80 Second Processor card
Requirements: Risc PC
Manufacturer: Aleph One
Tel: (01223) 811679
Price: £399 +VAT

Facts and figures

Thanks to John Nuttall at the Department of Maths & Physics, Manchester Metropolitan University for providing these figures. All tests were in a 16 bits/pixel mode.

Application	S1	S2	S3	S4	S5	S6	S7
Word Processing	2.33	3.49	3.14	27.93	1.13/5.25	0.95/4.68	1.19/5.31
CAD	3.71	5.51	6.02	96.06	2.6/11.81	1.48/7.18	2.91/12.87
Paint	3.73	6.10	6.92	52.82	1.44/10.68	1.05/7.43	1.5/10.93
Spreadsheet	3.29	4.75	4.15	26.37	0.68/12.81	0.62/9.93	0.69/13.00
Overall	3.24	5.46	5.56	50.82	1.47/10.14	1.03/7.31	1.57/10.53

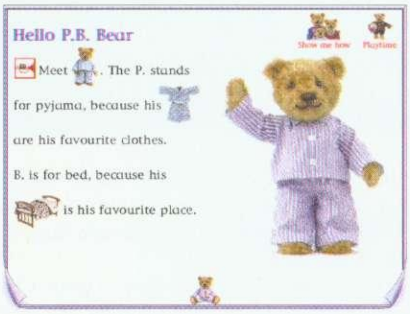
KEY

For Systems S5 to S7 XX/YY where XX is the speed with the Standard VGA driver and YY is the speed with the Arm Windows Driver. Bigger numbers mean faster operation.

S1 – System 1 – 486 DX33 8mb Standard VGA vessa local Bus
S2 – System 2 – 486 DX2/66 8mb Standard VGA vessa local Bus
S3 – System 3 – 486 DX4/99 16mb Standard VGA PIC Bus
S4 – System 4 – 486 DX4/99 16mb Accelerated cirrus logic display board
S5 – System5 – Acorn R700 22mb DX2/66
S6 – System6 – Acorn R700 22mb SX33
S7 – System7 – Acorn R700 22mb DX2/80 – New card

REVIEW

Welcome to the PC



A talking book with pictures; *PB Bear's Birthday Party* is a great program for under fives.

Geoff Preston looks at some PC CD-ROMs which now run on Acorns.

As those of you who regularly receive CD-ROM catalogues will know, Acorn does not usually feature very highly, if at all, in the list of titles. What native RISC OS versions exist are generally highly recommended, but there just isn't the range available, nor do I expect there ever will be. The fact is, the Acorn market is too small to make 'Acorn only' CD-ROM products economically viable.

However, don't give up and buy a PC just yet: there are two ways around the problem. The first is to make dual-platform CD-ROMs. Several companies have done this and a couple have even produced triple-platform discs which is really hedging their bets. The second option is to take a PC CD-ROM and write a PC to Acorn converter that translates the PC data as it's read. The majority of the early Acorn CDs were of this type, including *Hutchinson's Encyclopedia, The Complete Works of Shakespeare* and *Sherlock Holmes on CD.*

Innovative Media Solutions (IMS) has started creating a series of *PCTOAcorn* readers for two very popular series of CD-ROMs which will be familiar to PC users. The first is from Dorling Kindersley and the second is from none other than Microsoft. The advantage of this method is that the end user gets a larger resource. Multi-platform CD-ROMs generally have the same data stored two or three times – once for each format – which means that the overall size of the program can be only about one-third of the size of the disc.

Dorling Kindersley

The delightful books from Dorling Kindersley include such titles as *The Way Things Work, The Ultimate Human Body* and *PB Bear.* By the time you read this, there should be four *PCTOAcorn* readers ready, and a further seven in various stages of development.

I received a review copy of *PB Bear's Birthday Party* and began by running it on a PC just to establish the standard. I then ran it from a Risc PC via RISC OS and the *PCTOAcorn* reader and frankly couldn't tell the difference – which is as it should be. There is a warning in the *ReadMe* file on the disc that the sound may become broken if used with a parallel port (printer port) CD-ROM drive; as I don't use one of these I don't know if this really is a problem.

For those with children under five and a RISC OS computer with a CD-ROM drive, this is a super program which is guaranteed to enthral. *PB Bear* is a 'talking book' with pictures to replace some of the words. The text can be read out either a page or a phrase at a time. Click on one of the pictures and the word it replaces is displayed after a short animation of the picture.

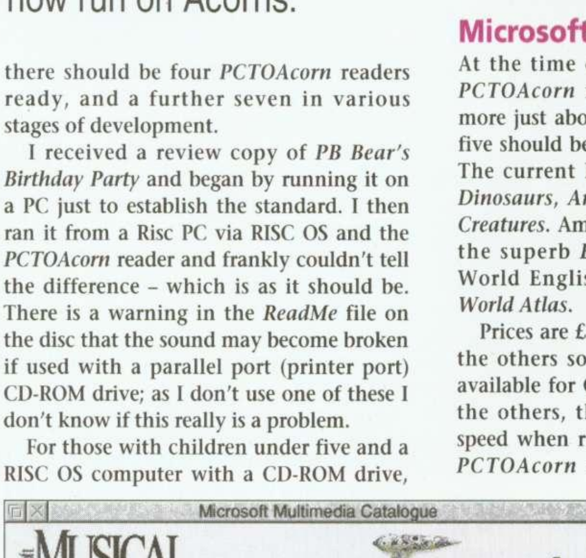
Each of the 18 pages has a large animation which can last as long as 30 seconds. If used with a low-spec Acorn (for instance an A310 with ARM2) the large animation is rather jumpy, but the smaller ones are acceptable. Also featured is an on-screen help which gives a spoken guided tour of the program; each page also has a couple of simple games which feature the same digitised graphics and speech.

PB Bear's Birthday Party with its *PCTOAcorn* reader costs £39 inc VAT from the Dorling Kindersley Family Library or CD Circle. The prices for the other Dorling Kindersley titles have yet to be decided.

Microsoft

At the time of writing, there were two *PCTOAcorn* readers finished with two more just about ready for release; another five should become available during 1996. The current list is *Musical Instruments, Dinosaurs, Ancient Lands* and *Dangerous Creatures.* Among the new releases will be the superb *Encarta Encyclopedia 96* – World English Edition and *Encarta 96 World Atlas.*

Prices are £39 for *Dinosaurs* and £48 for the others so far released (discounts are available for CD Circle members.) As with the others, there is a slight decrease in speed when running via RISC OS and the *PCTOAcorn* reader, but it's not really noticeable and all the features work in exactly the same way as the PC versions.



IMS has got *PCTOAcorn* readers for four of Microsoft's CD-ROMs, with five more on the way.

Networking

Networking is not currently possible. The *PCTOAcorn* readers will only look for a local CD-ROM drive and not a networked one principally because, at present, neither Microsoft or Dorling Kindersley have decided on licence terms. At the time of writing, IMS was talking to both parties about multi-user licences. AU

Contact details

Innovative Media Solutions/CD Circle
Tel: 0117-979 9979
Dorling Kindersley
Tel: 0171-753 3488

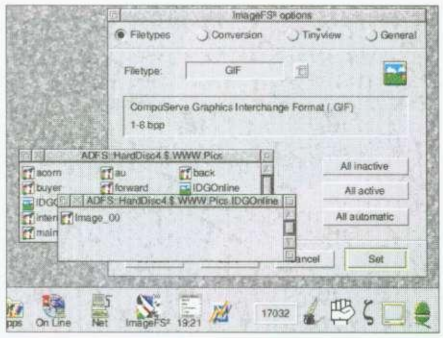
Image FS²

Ever since the first release, Alternative Publishing has tried to keep *ImageFS* the best-performing and best-looking image file filter on the Acorn platform. There is no doubt that it has managed to maintain the number one spot and also pull even further in front of the competition with the latest version.

The packaging is about the best you will find for any application in its CD case with Mr Men book-sized manual. Installation is very fast and loading is virtually instant. Click on the icon once loaded and the preferences window offers a logical and nicely laid out set of options for the various features.

There are three main features. The first is the invisible file import and export filter that has not been changed since the last version, except that a few more sub-types are now supported of the PCX, BMP, Clear, PBMRaster, SunRaster, Targa, Tiff, Gif, MacPaint, IMG, AmigaIFF, ColourRix and Pict2 main file types. Anything significant I have ever come across is supported, apart from JPEG which can already be imported into every serious graphics package on the Acorn; *Photoshop* and DCS is to come.

Just drag the funny icons that you may never have seen before directly into *Paint* or any other package that loads sprites and *ImageFS²* converts the image without you ever knowing it. Alt-Drag on saving and a popup window gives instant export options of most of the above file types.



***ImageFS²* offers full control over file conversion.**

Product details

Supplier: Alternative Publishing
Tel: 0141-248 2322
Price: £39.95 + VAT

Pros: Transparent conversion of files • Thumbnail previews of files • Very fast

Cons: No JPEG conversion yet • Less extensive Freeware file converters exist

The second part of the program is called *Tiny View* which enables you to view a 200x200 or 400x400 thumbnail of a disc image without having to load it into *Paint* or long-loading graphics packages like *Photodesk*, just for a quick peep. The window automatically closes, Mac style, once you move the pointer away.

The last part of the package is *Universal Image*. It is an immobile window that can repel other windows and sits on the right side of the Desktop with a stack of image troughs running down it. Drag an image file on to it and a thumbnail appears which can be dragged directly into applications or application windows. This is a superb feature for DTP and the planned improvements for the full version include OPI and DCS support.

Near future versions of *ImageFS* will include the first of the foreign vector file filters, a JPEG loader and image headers as icons *à la Photoshop*. *ImageFS²* is now even better value and for people dealing with outside platforms it is perfect.

Jack Kreindler

PC Survival Guide

This slim volume (roughly the same size and weight as the RISC OS PRM index) sets out to help Acorn users perplexed by the introduction on to their machine of certain foreign and hostile personalities – namely DOS and Windows.

So as not to tread on ground already covered by various books of the *PCs for Dummies* ilk, the *PC Survival Guide* confines itself to problems specific to Acorn users: those problems associated with getting the various emulators to run and the quirks of Windows and DOS that will take RISC OS users by surprise.

It has a good deal more information on the first point than on the second. It describes the various options for PC emulation from the software *PCSoft* and *FasterPC* solutions up to the Risc PC co-processor, along with a detailed step-by-step guide to setting them up.

The guide is pretty thorough, even describing how to make up a wire to get sound output from each of the cards to the audio input on every model of machine – with the notable exception of the A3020 and A4000 solutions, about which the guide is silent. The Risc PC diagram is blatantly not to scale, by the way, though other illustrations in the book are clear and helpful.

When considering the quirks of Windows and DOS the guide has less to say. It does go through the installation of PC DOS, MS-DOS and Windows 3.1 in detail but doesn't address that burning question 'How does the Windows File Manager work?' for instance. In fact, towards the end the guide it starts glossing over subjects with very inadequate detail – the useful DOS commands appendix being an exception – that almost looks as though the author suddenly ran out of room.

The glossary is a case in point: while 'Program Manager: Windows' equivalent of the RISC OS icon bar' is a forgivable simplification and describes it fairly well, 'MPC: Multimedia PC' isn't really helpful and 'MS-DOS: Operating System produced by Microsoft' could usefully be elaborated upon. The RISC OS user encountering PC terminology needs a lot more hand-holding than this.

The other problem with the guide is that it dates quickly. It doesn't have details of the latest software revisions or DX4-100 cards. However, this shouldn't be a problem; the Risc PC section covers the old software well, and there haven't been that many changes.

The bottom line is that if you've already set up your PC card and have installed DOS and Windows but are having problems running them, one of the more general PC books is for you. However, if you're having problems getting everything to run in the first place, this could be just what you're looking for.

David Matthewman

Product details

Supplier: Beebug
Tel: (01727) 840303
Price: £5.95 (no VAT) + postage

Pros: Comprehensive guide to setting up PC cards and software • Good tutorials for configuration • The only book of its kind • Very cheap

Cons: Some subjects glossed over • Once a card is running you're on your own • Dates quickly


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STOP.
STOP

Argo is the 'One Stop' you need - we supply everything to get you on-line - from the software to the modem to the Net connection itself - we do it!

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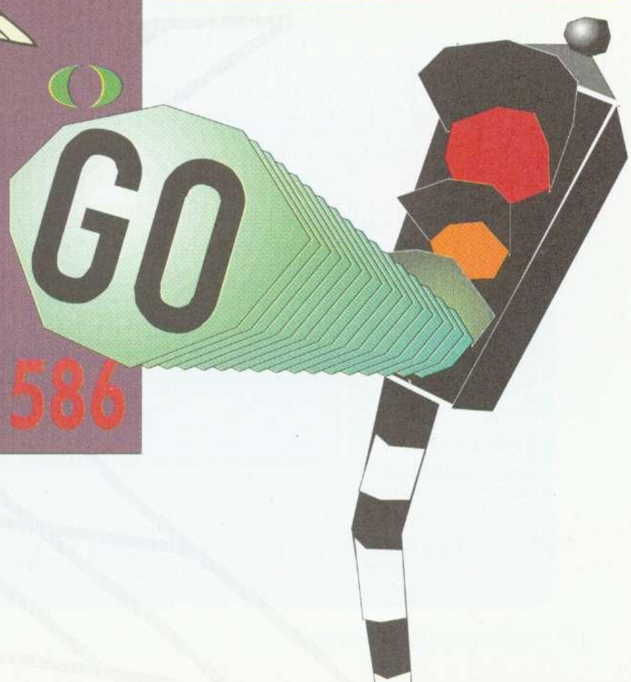
- Special offers - as part of the VTi and Eclipse group, Argo has the buying power to offer other products at special prices - these are exclusive offers available only to our users!

- For schools we also provide a version of Voyager that will work over your internal network - using only one line and modem, you can have multiple e-mail addresses and more than one user using different parts of the Net at the same time.

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BETT again

For the first time, BETT is encouraging parents and not just teachers to attend. For those who want to by-pass the rest and just see the best, follow Geoff Preston's whistle-stop tour.



Sepia for that traditional look, as you discover the environs of the River Itchen.

4Mation (Stand 152)

Several new products will be on display at the show but top of my list will be the latest offering from 4Mation. Normally noted for material for the up-to-10 age range, the company has a new product aimed at slightly older children. I talked to Mike Matson at Acorn World and he was enthusing about his current project – a talking book for those who can read.

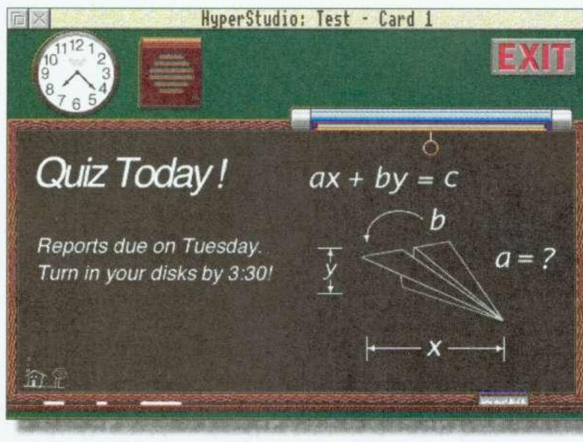
'There's a real gap in the market' he said. 'Plenty of talking books are available for people who can't read or who are learning to read, but nothing for those who already can. I've written a book of about 35,000 words and this is on a CD-ROM with speech and graphics.'

The user can select one of six degrees of difficulty and the book will be displayed in one of three modes: text and graphics; text, graphics and speech; or speech only. If a word is clicked on, the computer will load the glossary and provide the meaning of the word. Click on a place name, and a map is displayed showing its whereabouts. If successful, it will be the first of a series.

Sherston (Stand 260)

Sherston can always be relied upon to come up with something special and this year will be no disappointment. At the time of writing, Sherston is expecting to have its first multimedia CD-ROM, *Up and Away*, available for viewing, although probably not quite ready for release.

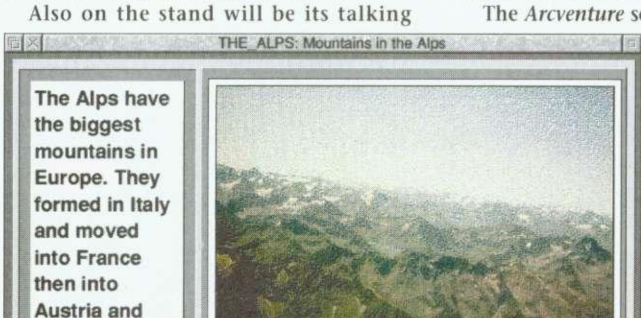
Also on the stand will be its talking books – frequently imitated but seldom bettered. Not only does the company produce talking book versions of stories from the Oxford Reading Tree series, but also talking reference books like the *Infant Oxford Talking Atlas*. Look out for the CD-ROM versions which are especially good value for money.



The latest multimedia tool from TAG features extreme ease of use and lots of special effects to include in you productions.

There's not a great deal of software around for the very young, but Sherston will be showing *Elf World*. These two enchanting adventures are for young children and are set in the world of elves where words are magic and maths is fun.

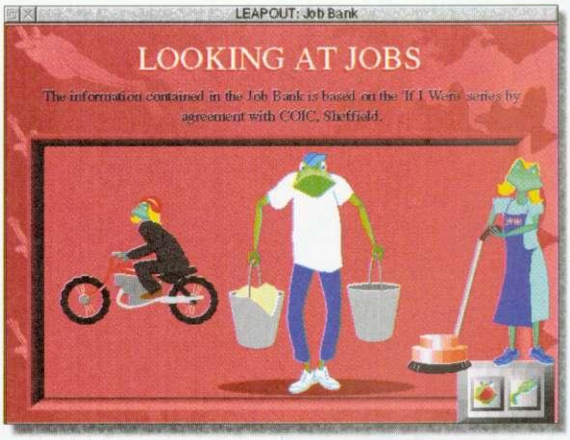
The *Arcventure* series has been very popular for Key Stage 2 History, and fans will be pleased to hear that it has returned for one more adventure. The latest incarnation (*Arcventure IV*) is on the subject of Anglo Saxons and follows a similar outline to Sherston's previous *Arcventures*: a simulation of an archaeological dig where unearthed items can be investigated to provide an insight into life at that time. Like the previous *Arcventure* packs, Anglo Saxons comes with the usual printed resources to accompany the program. As with all Sherston's software, self-motivation for pupils is supplied at no extra charge.



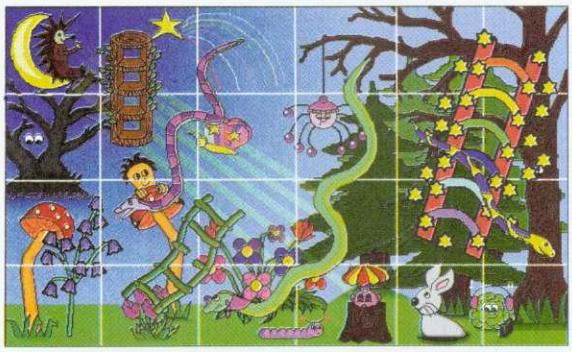
Clear text, superb pictures, simple but effective layout aimed at Key Stage 1 and 2. Alps offers lots of resources on the disc.

SEMERC (Stand SN1)

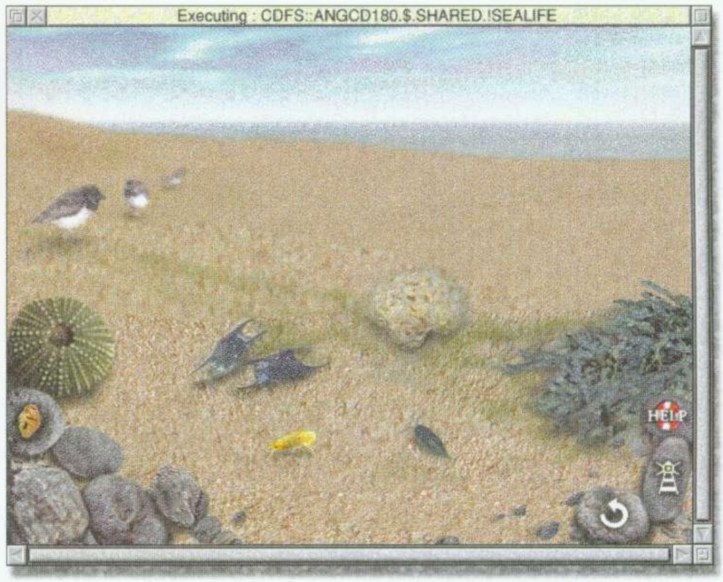
SEMERC's new primary graphic spreadsheet *Maths Frames* is not just new, it's different from anything I've seen before. It introduces spreadsheets in a most interesting and stimulating way. The main window contains a selection shelf, a calculator and a landing pad. Each file contains



Leapout is a clever introduction to careers.



MagicMaths is another clever piece of software from CCS which will prove fun as well as being educational.



Seashore Life offers more high quality multimedia from Anglia.

a number of pictures, all of which can have up to five associated values.

For example, the theme could be shopping and then you'd have an assortment of products on the selection shelf, like baked beans, cheese, apples and cakes. You would select foods by dragging them on to the landing pad which in this case would be a shopping trolley. A spreadsheet will total up whichever set of values are required – price, calories and so on – and a graph can be drawn, again based on whichever values are chosen. Hot links between the three parts of the program – picture, spreadsheet and graph – ensure constant updating. Brilliantly simple; great idea.

Anglia Multimedia (Stand 357)

All the CD-ROMs reviewed on page 69 will also be on show at BETT and it will be well worth a visit to their stands. Two that didn't appear in the CD-ROM review because they arrived a few days late are *Vikings* and *Seashore Life*, both by Anglia.

Vikings will be of special interest to Key Stage 2 History teachers as it includes just about everything needed to deliver this topic in a stimulating and exciting way. It was produced in association with the Jorvic Centre in York and is a definitive guide presented in an interesting and stimulating way for Key Stage 2 pupils. It even includes printable worksheets that can be used 'as is' or altered to suit your own requirements.

Seashore Life brings the world of the beach into the classroom. High quality pictures coupled with over 30 video clips from the popular *Survival* TV series make a comprehensive guide to this fascinating subject. There is a massive amount of information as well as some quizzes.

TAG Developments (Stand 170)

Starting next month, *Acorn User* will be featuring a series on creating multimedia productions. Central to this series is a comparative evaluation of some of the multimedia authoring packages including the latest program from TAG – *Hyperstudio*. This is a very easy program to use and includes some clever features which will make the production of professional looking multimedia presentations very easy indeed.

One of the special features is the different ways it can clear the window between page changes. Most other multimedia authoring tools just blank the current page before rendering the next. *Hyperstudio* can fade from one to the other, or scroll, slide or open like doors.

HMTC (Stand 447)

One of *Hyperstudio's* main rivals is Oak Solution's *Genesis* and Hampshire Microtechnology Centre has long been involved with this program. At the show will be *The Hampshire CD-ROM*, a disc containing three *Genesis* multimedia applications from primary and secondary teachers.

The Alps was created by Maureen Gooding and contains over 200 pictures and 100 pages of text. Chas Duckhouse's *Itchen* is a study of the geographical, social and historical features of the River Itchen and *Leapout* is a careers database coordinated by Bill Jones and aimed at children from 8 to 14. All these presentations will be of real use in school and will also prove that high quality multimedia presentations are not just the preserve of professionals.

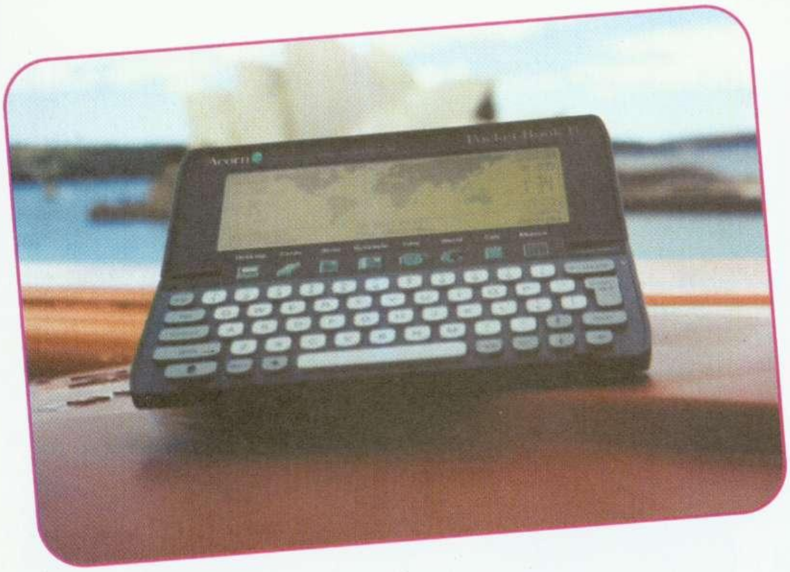
AVP (Stand 355)

If you haven't seen *Picturebase* yet, now's your opportunity. AVP will have its complete range on view, including the latest additions to this superb suite, *Perspective Francaises* and *English Architecture*. The former covers a variety of topics including life in different places, plants, animals and changes which affect lifestyles. The latter looks at architecture through two strands: religious (beginning with Saxon churches) and secular (beginning with Norman castles). Both strands progress to the present day.

CCS (Stand 420)

Creative Curriculum Software has produced some super programs for both primary and secondary schools. The CD-ROM roundup features its latest CD-ROM, but CCS will also have its new mathematics program, *Magic Maths* on sale.

To finish, a program on a lighter note, but one from which youngsters will get a great deal of pleasure. *The Patience Addict* is, as the name implies, an addictive program featuring 20 versions of patience, or solitaire as it is sometimes called. I wouldn't want to use this in lesson time, but it would be an ideal program for school computer clubs. AU



Planes, trains and ...

It's a long way to Australia. If you look in the *World* application on the Pocket Book, it says Sydney is 10,555 miles from London – if you ignored the sea and drove in a straight line for 12 hours a day at 70mph, then it would take you about 12 and a half days to get there. That's a long way.

It's a perfect place to lose yourself. Being the world's sixth largest country and with a population of just 17 million (more people watch *Neighbours* in the UK than there are Australians!), being out of contact is easy, if that's what you want, but to those of us used to e-mail, faxes and the like, backpacking in the outback is little short of self-imposed ostracism. At least, that's what most people think.

Keeping in contact

Until recently, the idea of living out of a backpack *and* having an e-mail address was ridiculous. It wasn't that long ago that Osborne Computers was selling portable PCs the size of suitcases, with a weight to match. Look at the adverts from the early '80s for the Osborne portable, and it's only the white knuckles and strained smile of the model holding the machine that give the game away.

These days, portable computers are everywhere. With an A4 and a modem, you can keep in contact over the Internet from any hotel room, and as long as you can find a mains socket to recharge, and a phone point, you're away. But the A4, and even the new IBM OS/2 Warp solution, is far too heavy for a backpacker, and you try finding a power point in the bush, let alone a phone point.

Other manufacturers have solutions – the Apple Newton is a brave attempt at portable in-touch computing – but they're expensive and still suffer from short battery life. The Pocket Book II has excellent battery life (a couple of Duracells give over 35 hours of continuous use) and it's light and small, but have you ever seen an Internet package for it? There isn't one, but there is a solution.

3Fax

The Pocket Book II is based on the hugely successful Psion 3a and anything that works with the Psion also works with the Pocket Book, from software to hardware to leather carrying cases. One Psion product that a lot of Pocket Book users don't know about is the 3Fax, a fax modem. It works with the Pocket Book II (not the original Pocket Book, nor the Psion 3), and needs at least the 512K version: it won't work with the 256K Pocket Book.

The 3Fax is a truly fantastic piece of kit. It's not much bigger than a Mars bar, and runs off two Walkman-sized batteries (the same as the Pocket Book) or from the mains using an optional mains adaptor. It has a lead at one end which plugs into the expansion port on the left of the Pocket Book – the same hole that the A-Link slots into – and another lead which has an English phone plug on the end.

The 3Fax is aimed mainly at those who want to send faxes, hence the name. Plugging it in provides a new 'disc', called Disc C, from which you can install four new applications: *Fax,* the main fax manager; *FaxCover*, which enables you to design cover sheets for your faxes; *Comms*, which provides an interface to 3Fax's modem features; and *Script*, which is used to create automated scripts for logging onto bulletin boards and the like.

If you've got an A-Link, you already have the last two: you can install then with Acorn-J from the Desktop, choosing Disc C. Theoretically the A-Link can connect to a standard modem with a serial input.

The Fax manager is delightfully easy to use, and contains so many features that most people will only use a third of them. Sending a fax consists of three main steps: creating an optional cover sheet, the design of which is based on a template designed by the *FaxCover* application; attaching documents to send after the cover sheet, which is again optional; and finally entering the fax address (a fax number).

The number of things you can do with faxes is mind-boggling. Faxes can be queued, can be set up to be sent automatically at a certain time (the Pocket Book switches itself on automatically, just like it does when an alarm is set), can be removed from the queue to be re-sent at a later date, and so on. You can attach documents from any Pocket Book application that can print, like *Write, Cards, Schedule* and so on – all you do is open up the Print setup dialogue box and change the printer to the newly available 'Fax'. When you

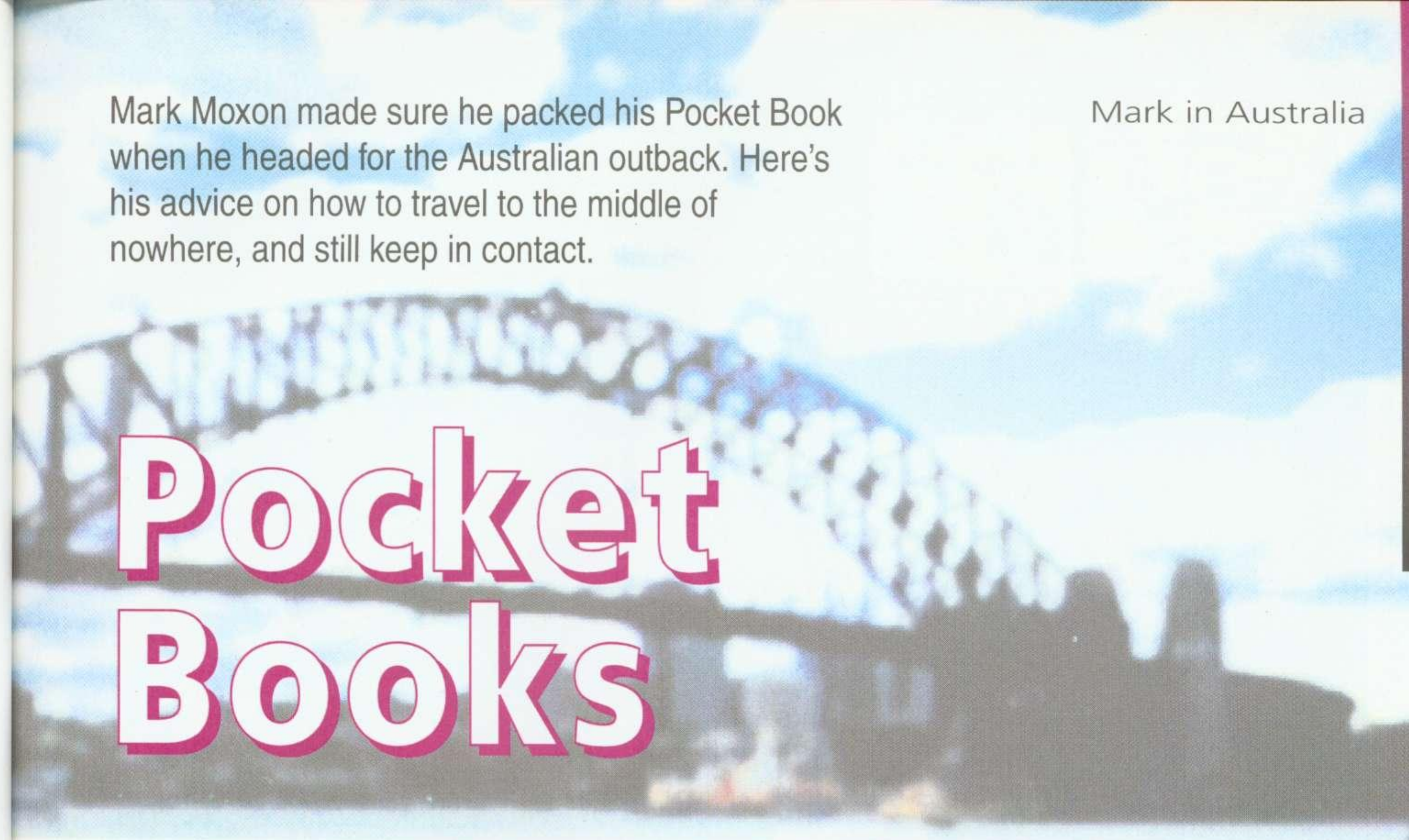
Product details

Product: 3Fax
Supplier: Psion
Tel: 0171-262 5580
Fax: 0171-258 7342
Price: £199 inc VAT

Product: TeleFast
Supplier: Teleadapt
Tel: 0181-421 4444
Fax: 0181-421 5308
E-mail: teleadapt@delphi.com
Price: £129.99 + VAT

Product: TeleDaptors
Supplier: Teleadapt
Price: starting at £29.99 + VAT
Product: Internet connectionz

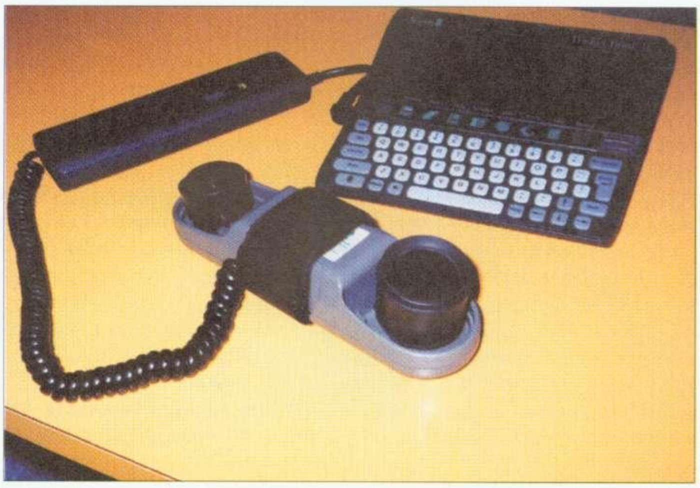
Supplier: Compuserve
Tel: 0800 289378 (freephone)
Price: starting at £6.25 per month



Mark Moxon made sure he packed his Pocket Book when he headed for the Australian outback. Here's his advice on how to travel to the middle of nowhere, and still keep in contact.

Mark in Australia

Pocket Books



No mains required: Pocket Book II, 3Fax and acoustic coupler

print, a special fax file is created which is picked up by the Fax manager.

Creating cover sheets is a doddle with the cover sheet designer. *FaxCover* is based on the *Write* word processor, but you can also include pictures, and special character codes that are translated when the fax is sent (so, for example, the sequence ^S is replaced by the sender's name when the fax is actually delivered). It's also useful to use the graphical characters in the Pocket Book, a list of which is at the end of the Pocket Book manual.

Pictures aren't shown in the document itself, but you can view them in a little window if need be. Any standard .PIC file can be used, but .BMP files can also be used – and translated on the Pocket Book – so if you want to design a logo on your Acorn, you'll need an application that can save .BMP or .PIC files. An upshot of using .PIC files is that you can take screenshots off the Pocket Book (using Acorn-Control-Shift-S) and include them in your fax, handy if you want to include graphs from *Abacus* or *Plotter*, for example.

Sending the fax is equally easy. All you need to do is plug your 3Fax into a phone socket and type in the fax number to send it to. The Fax manager tells you exactly what it is doing: 'Dialling', 'Connected to fax machine', 'Sending fax' and so on and there's a little speaker in the 3Fax so you can hear exactly what's going on.

The only thing you need to fax from abroad is an adaptor for the phone plug: a comprehensive collection of 'TeleDaptors' is available from Teleadapt, whose contact details are at the end of this article.

Internet, global style

Faxing is great: it's fast, easy, and the quality of the 3Fax's output is better than normal scanned faxes, as all the characters are computer-generated rather than scanned from paper. The only problem – and a big one if you're on a backpacker's income – is cost. A few pages of fax send to the other side of the world can cost quite a few quid, and a lot more if you're going through a hotel switchboard.

The cheapest solution is to use the Internet. The theory of sending e-mail through the Internet is sound. For the cost of a local phone call to your Internet provider – such as Demon, CIX or Argonet in the UK – you can send a message to anyone in the world. There are two problems with these systems for travellers; Demon and the rest only have UK numbers, and secondly the Pocket Book doesn't have a TCP/IP stack, so it can't talk to the Internet provider anyway.

The solution is to use Compuserve. This American company is truly global – it has numbers in all the main cities of the Western world – and the charge is low about 6.25 per month, though it is charged in US dollars, so it fluctuates a little. The best part, though, is that it acts like a bulletin board, so if you are accessing through a dumb ASCII terminal, you can still use most of the services.

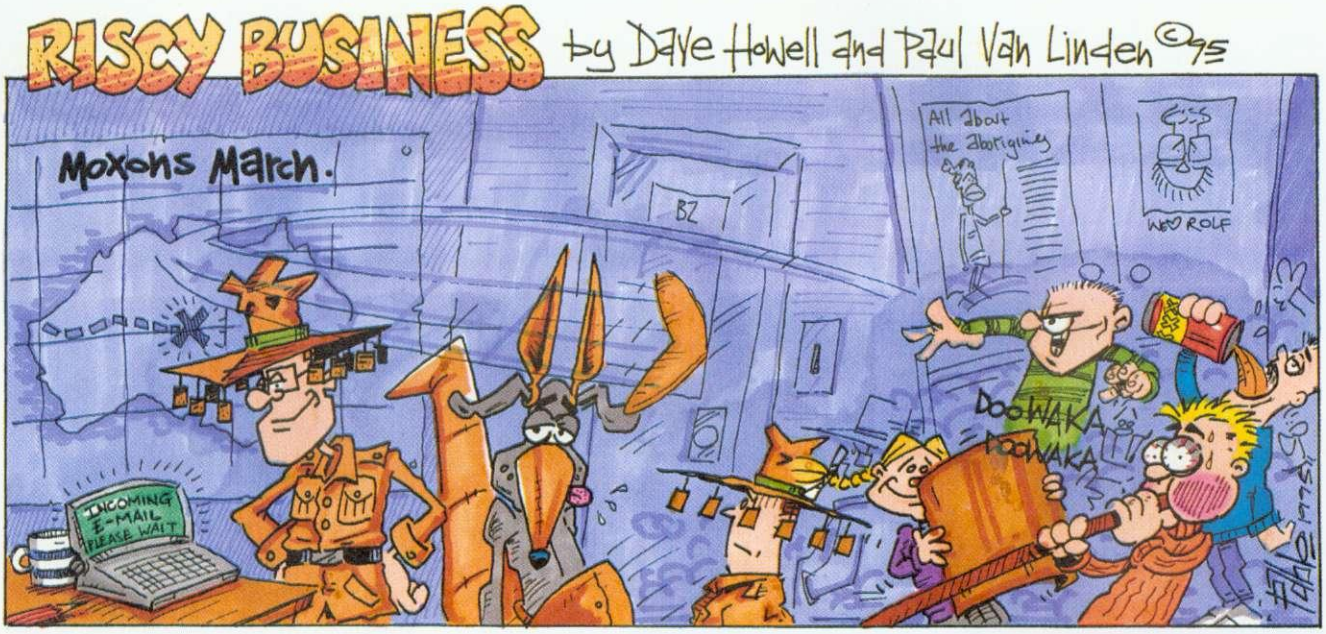
Compuserve provides you with a unique number, like 101353,2442 for example, when you register with them on-line. This then forms your e-mail address: for the above, you would be: 101353.2442@compuserve.com.

There are plenty of other handy features on Compuserve too. If you want to send a fax, you can send the text as an e-mail to Compuserve, making sure to include the fax number in the header, and Compuserve will fax it for you, using only a local phone call.

There is a small charge for this service, but it's much cheaper than faxing on an international call rate. You don't have the control over cover sheets, and you can only fax straight text without any fancy effects, but 'you pays your money and makes your choice'.

Morphing fax to modem

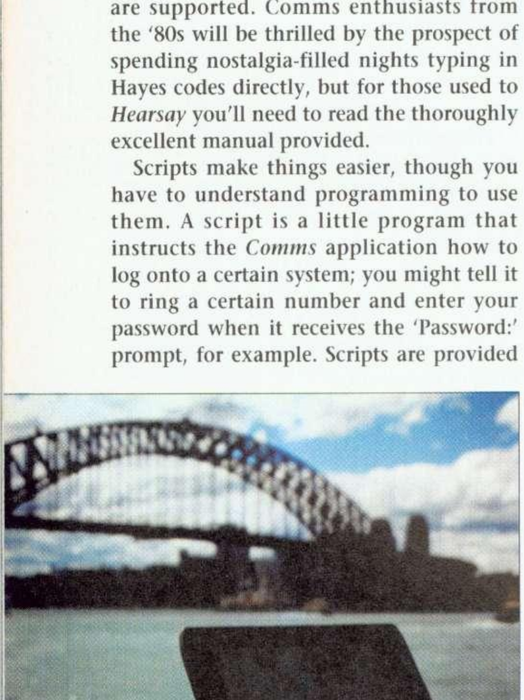
The 3Fax provides you with a modem, albeit a rather slow one of 2400 baud. Compared to the fax side of the kit, the



comms software is primitive to say the least. You have to talk to the modem directly using Hayes commands (ATD, ATX and so on) and only ASCII is supported, so no ANSI or VT terminal codes are supported. Comms enthusiasts from the '80s will be thrilled by the prospect of spending nostalgia-filled nights typing in Hayes codes directly, but for those used to *Hearsay* you'll need to read the thoroughly excellent manual provided.

Scripts make things easier, though you have to understand programming to use them. A script is a little program that instructs the *Comms* application how to log onto a certain system; you might tell it to ring a certain number and enter your password when it receives the 'Password:' prompt, for example. Scripts are provided for logging onto MCI and CIX, and these can easily be modified to other systems: I have one which puts up a series of menus so you can choose which Australian city you are in, and it takes it from there.

The fact that it is possible to have an e-mail system in a truly portable package that can be used globally for such a small cost – local phone calls are 40 cents in Oz for as long as you like (that's about 20p) – is a testament to how far communications has come. 2400 baud is more than adequate for the text-based Compuserve, and other bulletin boards like Sydney's ARMature II BBS, even if you are used to 14.4k or 28.8k back home; and it's easy to prepare your mail off-line and send it all in one go. It surprises me that more people don't do it: when I rang up Compuserve to join, they seemed quite amazed that I was using a palmtop, rather than a DOS-based portable.



No phone? No worries

All the above is hunky dory if you've got a phone line. But what do you do if you can't persuade someone to lend you their phone socket, or the phone in your room is hard-wired into the wall? The answer: get an acoustic coupler.

Comms afficianados will remember acoustic couplers as the preferred way of connecting your phone to your modem back in the early '80s. They have two cups into which your phone handset plugs, thus connecting your modem to the phone. These days all self-respecting modems plug directly into the wall, but not only is the acoustic coupler alive and well, but it's vastly improved.

Teleadapt's TeleFast adaptor is small, very light, runs on one 9-volt battery that will last for over 30 hours of connection time, and works at speeds of up to 24,000 bits per second over most phones, and 2400bps over carbon pay phones (which have lower-quality handsets). Handily, its lead terminates in a US-style phone plug, which plugs straight into the 3Fax if you remove the lead with the UK plug: there's no need for endless chains of conversion adaptors or extra leads.

Using an acoustic coupler is simplicity itself. Take the phone handset – I've only used payphones so far, and they work fine – position it over the little rubber cups and secure it with the velcro strap. Next, insert your money or phonecard, dial away, and type ATD in the *Comms* window to connect. You can get the modem to dial automatically, but experience shows that strange dial tones and low-quality pay phones can cause problems.

The last word

The complete system is very light and compact. It runs off five batteries that last for ages, costs much less than a laptop with modem, and provides most of the services anyone will need (the main exception being graphical Web browsing). A SSD is a good idea for your Pocket Book (which you can also fill with Public Domain games for those long waits in airports), but system requirements are low.

The only word of warning is practical. If you are off travelling the world with your Pocket Book, be careful which public phones you use. In the less salubrious corners of the globe, someone may see you using a computer, and might want it for themselves. And do pack it in a plastic bag – it rains in Australia too, you know. AU

● This article was written and produced on location overlooking Sydney harbour, and was e-mailed to Acorn User from a pay phone 305m up Sydney Tower, the tallest man-made structure in the Southern Hemisphere. G'day, mate!

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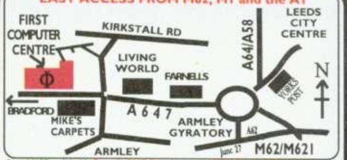
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EASY ACCESS FROM M62, M1 and the A1



From M62East Join M1 From the M1 follow signs onto M621. Take A643 Elland Rd turnoff from M621. Follow signs for A58. This merges with the Armley gyratory. From M62West Junction 27, A62 to Armley gyratory. From the A1 take the turnoff for A64. This merges with the A58 (by-passing town centre) which meets Armley gyratory.

Hardware

Acorn Risc PC's

PC700	
5Mb HD425 & AKF60	£1355.00
5Mb HD425CD & AKF60	£1465.00
5Mb HD425 & AKF85	£1630.00
5Mb HD425CD & AKF85	£1740.00
10Mb HD850 & AKF60	£1685.00
10Mb HD850CD & AKF60	£1795.00
10Mb HD850 & AKF85	£1965.00
10Mb HD850CD & AKF85	£2075.00
PC600	
4Mb HD425 & AKF60	£1140.00
4Mb HD425CD & AKF60	£1250.00
4Mb HD425 & AKF85	£1420.00
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Risc PC 486sx Card	*£99.99
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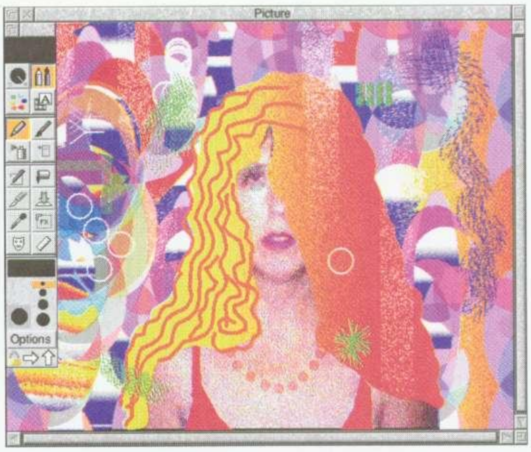
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FEATURE



Pete Worral looks to the future in the final part of his design series.

Virtual Design

Let's exploit the sheer creative power of the Acorn computer. But, what is virtual design? Basically, this is using computers to model and present design solutions in exciting new ways. So how do we begin to get our heads around this, read on.

Virtual hair design

How about giving yourself a virtual hairstyle before visiting your local hair salon? In this case Mary offered to be the *slightly* unwilling subject in front of the *Canon Ion Video Still Camera*. The shot was digitised and transferred onto disc in spritefile format. If you try this at home its good practice to take a profile shot as well.



The easiest way to redesign your hairstyle on the computer screen is to load yourself into any art package and draw your new style over the old one. In this case I used the Longman Logotron's excellent *Big Picture* to create a range of wigs.

The Masking feature lets you outline a specific regular or irregular area of the screen for individual treatment, without affecting the rest of the image. Using this method several wigs were easily created using Mary's head as a template.

Different wigs were cut out and saved for future use – useful if your client changes their mind. In the final blond bombshell picture I used the new tools menu to apply bubbly background effects including Raindrop, Wax crayon and Star.

All that remains is to take your virtual hairstyle printout to the hairdressers and impress. Taking this idea a step further, what about creating body accessories such as jewellery and headgear for clients in the same way, a sort of personalised service if you like.

Virtual animation design

The advertising industry thrives on computer special effects to attract prospective clients. Sequential digitised moving images can be grabbed from video tape and turned into a short film using Iota's *Complete Animator.*

In this case one of my students ran towards a video camera and a series of eight images were grabbed using Computer Concepts' Eagle Digitiser, saved as sprites, loaded into *Complete Animator* and recorded in Iota format film.

The frames were edited by freehand drawing over each frame on the figure, while retaining the original background. The final film was quite surreal. The beauty of *Complete Animator* is that you don't have the inconvenience of transferring images into other software because it is an art and animation package, all in one.

For extreme animated design effects try using a morphing package such as *Rephorm* which is great if you want to metamorphose yourself into an onion or dog.

I think that this sort of time-based special effect design is OK as long as your specific aims are clear and remember that its even better if you possess a genlock board so that you can record your work onto video tape.







Virtual mosaic design

Perhaps virtual design is most effective in improving exterior or interior environments. Artwork and sculpture can be manipulated easily into a range of situations using cut and paste techniques. Last year a Mosaic Artist at Willingsworth High

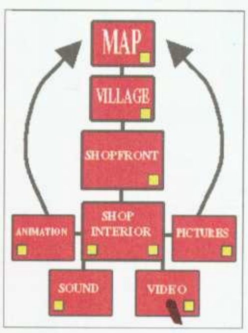


School created a large site-specific mosaic celebrating events in the history of the school and community including the Tipton Slasher, factory chimneys and our beautiful Spring daffodils.

Twenty-one panels were constructed using real glass tesserae. These were individually digitised so that they could be put together in different ways, like a jigsaw puzzle on the computer screen. A number of prospective sites around the school were also digitised so that the mosaic could be scaled into position. Eventually this magnificent mosaic was installed in the foyer above the doors leading to the main hall.

Virtual multimedia design

Multimedia is the fusing of text, sound and the moving image within the confines of the computer screen and has two distinct strands. Firstly, the majority of us use multimedia applications in floppy disc or CD-ROM format to access information for pleasure, education or profit.



Secondly, there is the do-it-yourself approach, which is all about creating your own customised multimedia presentations.

Multimedia really consists of sets of interlinked pages containing different forms of information and the designer must create these pages and link them together in different ways. For the Acorn user *Genesis Professional* allows the you to create pages containing pictures (sprite/ drawfiles format), text, animation (Ace format files), and video (Replay format files). Special 'click here' *boxes* can be created, which can be linked to any other page within the multimedia structure. From a design point of view, remember that you are trying to tell a story with pictures, text, sound, animation and video.

Multimedia design in the Black Country Museum

The Black Country Museum in partnership with Sandwell's Education and Microtechnology Unit released a Kodak Photo CD disc containing 98 high-resolution images based on the museum. Shortly afterwards seven postgraduate Art and Design students from the University of Central England set about designing multimedia material based on the museum using the Kodak Photo CD disc and museum site as starting points.



The design process began with the students collecting a range of data including drawings, photographs, tape and video recordings from their favourite areas within the museum.

With all the Black Country Museum data gathered and stored on floppy, the next step was to draw a flow chart showing the whole structure – using old fashioned pencil and paper. This is a really important exercise, as it helps to visualise the series of screens you are trying to design.

Contact details

Product: Big Picture
Supplier: Longman Logotron
Tel: (01223) 425558
Price: £69

Product: Complete Animator
Supplier: Iota
Tel: (01223) 566789
Price: £80

Product: Black Country Museum Kodak Photo CD
Tel: 0121-544 2001
Price: £20

Product: Genesis Professional
Supplier: Oak Solutions
Tel: 0113-232 6992
Price: £112

A guide to the General Stores

This begins with a plan of the Black Country Museum where with a mouse click you can zoom into the shop in three screen stages. To explore the shop there are two options; the first one offers a video clip showing the bacon slicer working or alternatively you can browse through the goods for sale. It is important that an additional button that will return you to the start. The zoom technique employed on this particular stack was extremely effective.

Three other themes were explored by the PGCE students including Looking at Patterns, The Fairground and Jim the Boatman telling his story about life on the canals – you can click on Jim and hear him singing an old folk song, my favourite bit.

Conclusions

At this very moment virtual designers are creating their very own Internet Pages using an easy-to-use script like language called HTML (Hyper Text Markup Language). This enables you to create your own home pages for a world wide audience. So there is plenty of scope for our designers of the future. Watch this space for more on this.

To conclude, I have very much enjoyed sharing a few ideas with you on this guided tour to design and would welcome to hear from readers who use Acorn computers to explore design solutions in unusual ways. Hopefully we will be able to publish the most original ideas. AU

Design Tips for Multimedia

1. Plan out your multimedia design in flow chart format using an old fashioned pencil and paper before you begin.
2. Remember that it is supposed to be interactive – always keep the user in mind.
3. Don't clutter the screen with too many action buttons and information boxes – keep it clear and simple.
4. Consider your use of colours carefully both for text and screen backdrops.
5. Try to include a few video and sound clips to enhance the presentation.
6. Evaluate the effectiveness of your design by trying it out with different groups of people, so that you can refine the final version.

Sounding boards

Andrew Banner checks out the audio mixer market.

Most people with a Risc PC are also likely to have a CD-ROM as these things are invaluable, especially if you use a PC card or like listening to music while you work. I don't know about you, but I prefer not to listen to my music through headphones and use my HiFi or active speakers instead. For even better results I need to fit an audio mixer card, but which one?

Eesox

First up, there's the Eesox mixer. This model allows you to mix the Risc PC's sound with that from a CD player. You can also plug in a 16-bit audio card such as the Minnie. There is a potential problem in connecting a CD-ROM to a card such as this as different drive manufacturers use different connectors for the audio output.

Eesox gets around this problem by supplying its mixer with a hard-wired lead with single pin connectors attached to the end. Instead of having a multi-pin plug, you need to connect each one individually. The card does not use separate grounds for each audio channel so there are only three connections to the CD.

Once it's all together, you might find that the CD is so loud that you can't easily hear the sound from the Acorn. You can adjust this in a number of ways via software (reducing the system sound using the *Configure* application, for instance) but you may end up having to adjust the gain of the CD by twiddling with the tiny controls on the mixer card. This is very much a case of trial and error and the adjustment can only be made safely by removing the card from the machine and then replacing it.

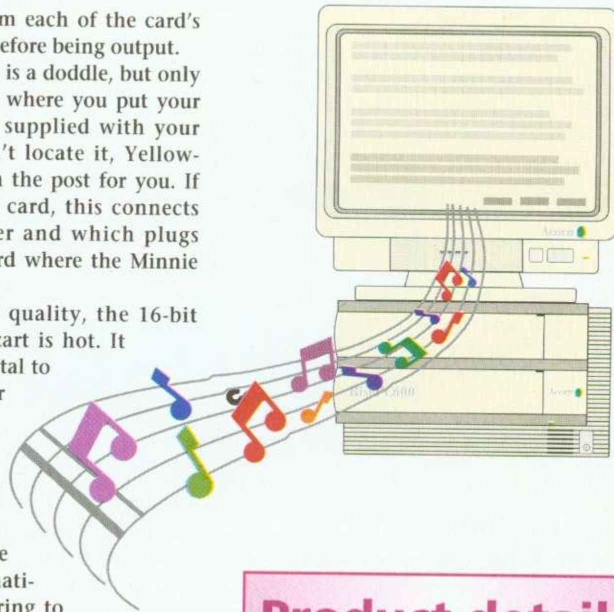
Yellowstone

Yellowstone provides two mixers to suit your needs. One is a standard mixer but with two CD-ROM inputs and the other – which answers to the name of Mozart – offers all this plus a rather snazzy 16-bit audio system, removing the need for a separate 16-bit card.

Apart from the 16-bit audio circuitry, both mixers work in the same way. They use a dynamic mixing system which doesn't require any level adjustment as this is done automatically. This means that the volumes from each of the card's inputs are equalised before being output.

Wiring the cards in is a doddle, but only if you can remember where you put your audio lead that was supplied with your CD-ROM. If you can't locate it, Yellowstone will pop one in the post for you. If you've got a Minnie card, this connects directly to the mixer and which plugs onto the mother board where the Minnie came from.

In terms of sound quality, the 16-bit sound system of Mozart is hot. It employs a digital Digital to Analogue Converter (DAC) with internal filters to smooth the sound and also oversamples the analogue signals. Unlike the Minnie card, this unit automatically adjusts the filtering to the sample rates being put through it for solid cut-off and a better quality sound.



Conclusion

If you want a mixer sound card and a 16-bit sound system, Mozart is the only choice. The sound quality is better than from Minnie and it's the same price. If the 16-bit sound is not an issue – perhaps you've got a new Risc PC with 16-bit on board – both the Eesox and Yellowstone cards have something to offer, but the double input of the YES model could be an advantage if you wanted to mix in a third sound source. AU

Fixtures and fittings

Fitting audio mixer cards is very simple and no technical knowledge is required. All you need to do is ground yourself (to discharge any static you may be carrying), plug the board onto the sound header on the main circuit board, remove two links, connect two wires and that's it.

Product details

Product: Audio Mixer
Supplier: Yellowstone Educational Systems
Tel: (01582) 584828
Price: £29 + VAT
Pros: Inputs for two CD-ROMS • Automatic level adjustment
Cons: Audio lead for CD-ROMs not supplied with card

Product: Mozart
Supplier: Yellowstone Educational Systems
Tel: (01582) 584828
Price: £59 + VAT
Pros: Good quality 16-bit audio sound system • Inputs for two CD-ROMs • Automatic level adjustment
Cons: Audio lead for CD-ROMs not supplied with card

Product: Audio Mixer
Supplier: Eesox
Tel: (01954) 212263
Price: £35 + VAT
Pros: Connects to just about any CD-ROM
Cons: Manual level adjustment



The way ahead

Ian Burley concludes our short series on Online Media, asking what can you do with this technology?

DOZENS of homes and eight schools in and around the Cambridge area are currently participating in the Cambridge Trial, which is evaluating a scale model digital interactive TV (DiTV) service using Online Media STBs or set top boxes. This month we examine what the trial participants are doing with their OM STBs, what's coming real soon now and what we all might be doing with the technology in just a few short years.



In the beginning ...

The Cambridge Trial was launched in September 1994. Currently, the partners in the trial are Advanced Telecommunications Modules Limited (ATM Ltd), Cambridge Cable, ICL, SJ Research and Online Media. The trial uses Cambridge Cable's digital network, ICL's Parallel Interactive Media (PIM) server, and network switches and small-scale servers from ATM Ltd and SJ Research. Online Media supplies the Acorn-based STBs, acts as the project's systems integrator and also looks after the 'Service Nursery' – a development facility to enable an exchange of knowledge and experience among actual and potential content and service providers.

Today, trial users enjoy an interesting sub-set of what is potentially possible in the medium term. Service providers are exploring uncharted territory – everybody is still learning. The main services are variations on what is already available over ordinary broadcast and cable TV. For example, ITN, the BBC and Anglia TV all provide national and local news bulletins which are originally broadcast at various times of the day. Where the trial adds value is through its video-on-demand function.

Let's say you were stuck in a traffic jam on the way home and you missed the BBC1 6pm news. No problem, your Online Media STB can deliver a recording of the programme when you want it, not just when it's convenient for the broadcasting station. You can even start watching a programme you're late for, from the beginning, even if it's still being broadcast live. This adds a new dimension to the term *time-shifting*.

To a degree, users will have intimate control over what they are viewing – if the phone rings, you can pause the programme.

If you missed something, you can rewind and start playback again. Just like a modern video recorder or Video CD player, you will be able to use a slow motion mode or jump immediately to a later or earlier part of the programme.

It's predicted that viewers of live broadcasts will be able to manually or automatically use a catch-up mode which plays back pre-recorded material a few minutes behind the live broadcast, but at a slightly faster rate so within a minute or two you've caught up with real-time, without missing anything. You wouldn't even need to put up with squeaky speeded up voices as your STB would correct the audio pitch automatically. Online Media STBs can't do this yet, but like a lot of other features – they could one day.



In practice and on demand

Currently, only selected broadcast programmes are regularly recorded to the PIM server for video-on-demand. However, there is no reason – apart from the sheer scale of media server hardware required – why users one day shouldn't be able to watch most TV programmes, including movies and audio broadcasts, when they prefer, on-demand. In fact, it's likely that the whole broadcasting industry will eventually have to gear itself to the video-on-demand phenomenon, though there will still be demand for real live broadcasts, especially for news and sports.

Users of the Cambridge Trial can already select from a rotated library of documentaries and other programming provided by the BBC, Anglia TV and Yorkshire TV. There is a firm bias towards education programmes at present, but eventually a full spectrum of programmes will be featured by a commercial service.

The material available need not be just digitised videos and films. Anglia TV and Yorkshire TV, for example, are providing access to some of their popular education multimedia productions which are normally distributed on CD-ROM. All of a sudden, the



network becomes your own CD-ROM drive with an almost unlimited number of CDs instantly available.

Online Media reports that audio-on-demand is proving to be popular. For example, the BBC is experimenting with schools audio programming and the eight schools connected to the service apparently use the service regularly in preference to the old distribution method which uses tapes and CDs. You no longer need to store these items, which can get damaged or lost. The network becomes your virtual audio and video repository.

Paying for soft access

The same goes for software. Acorn has provided a selection of education software titles and games on the network. The current STB has 4MB of memory and the idea is that you need only download the software you require off the network as you require it. In fact, STBs with local storage are a possibility, but there are plenty of



applications where this simply isn't needed. Look at games software services, for example. Even the largest games will download in seconds. Gameplay could have added dimension, with other people on the network joining in and the game itself could make extensive use of multimedia footage also stored on the server.

Eventually, you will pay per play, or buy a week's unlimited play time or even buy infinite access to selected games, but the only time that game would actually exist in your home, is in the volatile memory of your STB. Software piracy could, at last, be defeated.

Commerce and commercialisation

Besides interactive learning and leisure, the Cambridge trial already has semi-commercial services to offer. For example, the National Westminster Bank is providing access to its on-line banking service. Much like other similar services usually available down the ordinary telephone line, you can check your statements, pay bills, transfer funds, set up regular payments and so on. Nat West has also set up an interactive financial services brochure. One feature of this is a loan interest calculator, which is guaranteed to have the up to date interest rates.

The nitty-gritty of actual on-line commercial transactions, is not yet implemented on the system. However, Nat West is currently trialing *e-cash* – pre-paid smart cards which could be used to pay for services via a future iteration of Online Media's STB design. Millions of households already use a comparable system in the form of satellite TV decoder smart cards.

The supermarket chain, Tesco, an early recruit to the Cambridge Trial, has not yet started a live service, partly because of the lack of an on-line payment system at present. However, Tesco is working a virtual shopping system which will have degree of smartness built in. Customers will be able to navigate electronic on-screen supermarket aisles, selecting the groceries they require. The system will be primed with up to date special offer information and it will even get know your favourite brands as part of a pattern your shopping might take. It's interesting to note that ex-Acorn co-founder and managing director, Chris Curry, had much the same idea with his failed Keyline tele-shopping proposition a few years back.

Even the Post Office is involved with the Cambridge Trial. Its service is not live yet, but it will contain information about local post offices, services and postage rates. Larger post offices have retail stores selling stationery and other goods, so it's likely you will be able to order such goods on-line as well.

Another organisation involved in the trial is NOP (National Opinion Polls), who are involved in gauging user responses. Some programmes have on-line questionnaires attached to them, for example, asking what the user thought of the programme's content and presentation.

Securing the medium

In fact the whole Cambridge Trial system is tightly audited. All users, including individual members of the family have personal PIN numbers which they have to enter before using the system. The trial operators then know who watches what, when and how much. The PIN number security system will later be used as part of security-related facilities, like parental viewing control, for example.

The purpose of the Cambridge Trial is primarily to evaluate the requirements of a commercial DiTV network and to understand the requirements of running such a service from the points of view of the customer, the service provider and the network operator. As such, it will take time before some of the more fancy facilities and services predicted will be tested. But just think what is theoretically possible.



Users could enjoy broadband connections into the Internet – no more making cups of tea while your modem chugs away on the World Wide Web. Obvious features to come include video telephony, localised mini-servers operated by bureaux or businesses of various sizes. One day we'll be buying houses with the help of interactive estate agencies and virtual views of properties on the market, all from the comfort of home.

Crystal ball gazing

Perhaps my favourite prediction is interactive live viewing of events like, sports, for example. Imagine you're watching the Wimbledon tennis final. Today we see what the director and the cameramen dictate we see. One day, there could be fascinating fish-eye camera with an extremely high-resolution imaging chip. This could be placed where the audience sits, where it would have the same view as the cheering crowds.

Through the magic of DiTV, the viewer at home could use their STB to have virtual control over the picture being streamed digitally to them from that camera. You could pan left/right, look up and down and zoom in and out. The picture would be dynamically corrected in real time and quality would match or exceed today's broadcasts. Of course you won't be alone – thousands and even millions of others could have their own personally controlled view of the Centre Court. AU

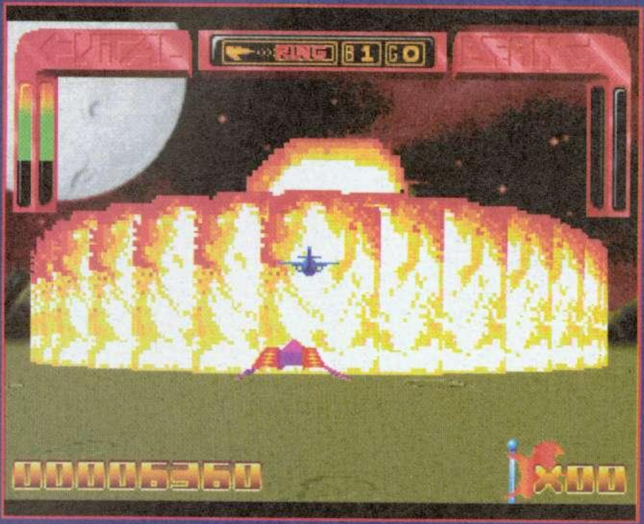

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GAME SHOW

Games, lies and videotape

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This should be a big enough boom for anyone.

Cobalt Seed

Supplier: TBA
Tel: 01761 470003
Price: £24.99

If you've played TBA's 'race in space' game *Formula Two Thousand*, you will have already seen what their custom three dimensional graphics engine, TAG, can do. *Cobalt Seed* makes heavy use of it once more in a fast action shoot-em-up touted as being 'the best looking game on the Acorn platform'. Does it live up to this claim? Read on, and discover all.

The aim of the game isn't particularly complex. There are five worlds to fly through before you reach your goal, the *Cobalt Seed*, and the number of objects you shoot between here and there bears a remarkable resemblance to your score. Other than that, it's shoot to kill all the way.

Cobalt Seed is supplied on one low-density disc – it's possible to install it to your hard drive or RAM disc which makes things that little bit quicker. As the game starts, you're treated to a view of your final objective, the cobalt seed itself, as it spins nicely in 3D. Upon starting the game itself, an impressive animation plays as the jet fighter is transported from the hangars to the launch pad.

After that, you're given control and explosions start blossoming from the bare ground. The gameplay is pretty similar to some of the scrolling shoot-em-ups around, with the exception that instead of scrolling up the screen, you scroll into it. This gives you a limited amount of movement up, down, left and right, but you're stopped before you can leave the playing area completely.

Waves of enemy fighters swarm towards you from the front and rear, and ground installations are quite generous with their laser fire. Coupled with this, you have to avoid buildings and rock formations that rush towards you as you speed on your journey. All this adds up for a manic session of ducking and diving – made somewhat harder by the unusual perspective. The camera sticks rigidly to the centre of the flight path meaning that when your ship veers to one side in order to take out an approaching jet, you're no longer looking down your line of fire and positioning yourself correctly is a matter of intuition.

The craft's firepower is impressive – starting off with a basic low-power cannon, it's possible to upgrade by catching the tokens hurled into the atmosphere by the larger installations when you destroy them. Once the strength of your laser has been enhanced, you can multiply its strength by picking up 'ghosts', small octagonal devices that float by your ship and mimic your fire. Of course, a shoot-em-up wouldn't be complete without a smart bomb, and *Cobalt Seed* is no exception.

Here, they take the shape of a small missile that flies off into the distance – when it lands, the screen fills with fire and any enemies present trundle off to meet their appropriate makers. Finally, you can charge up a special beam weapon that sends out a ball of energy, destroying anything in its path. It does take a few seconds to recharge, so it's important to get the timing right. You only have one life in this game, and the only thing standing between you and oblivion is your shield's energy bar.

This ticks down constantly and plummets when you get hit, and the only way to recharge it is to make it to the next 'vital hoop'. I would have preferred to see the player have a number of lives as well – it's somewhat depressing to have to start the level from scratch every time you die.

Cobalt Seed's graphics are adequate – the 3D representation on the warehouses and turrets is lovely, but I would have liked to see more detail on the sprites. The ground texture on the first level is a sort of mould-green speckle, which might be quite nice if you like that sort of thing, but I found it a trifle repetitive after a while. All in all, Cobalt Seed is a fun game to play, but as a shoot-em-up it doesn't grab me in the same way as something like *Star Fighter 3000*.

The TAG engine is impressive, there's no doubt about that, but I feel that it's not yet being used to its full potential. Still, it packs a punch and if you're desperate for some frantic blast-'em-away action, *Cobalt Seed* could well fit your bill.

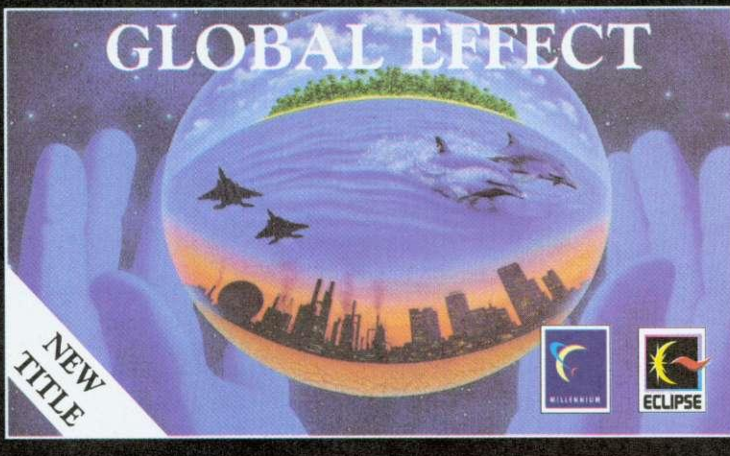
Steve Mumford



The detail on many of the structures is excellent.

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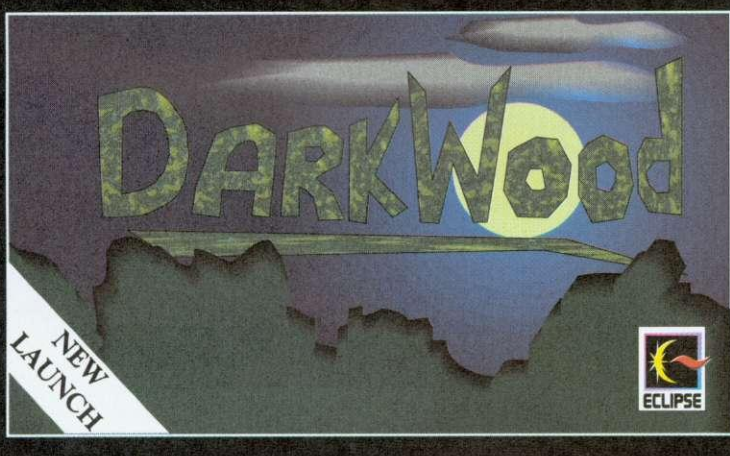






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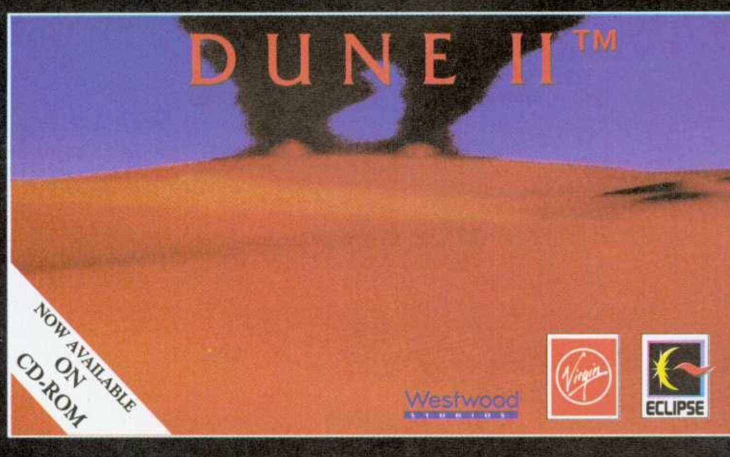






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Getting information on the ships.



Choose your mission.

Supplier: TBA
Tel: 01761 470003
Price: £24.99

Sticking firmly with the space theme, *Command Ship* is TBA's second offering this month. It's a hybrid of several styles of games but it borrows most heavily from the *Spheres of Chaos* vein – you take control of the deep space mining ship Andromeda, and it's your task to complete various missions in order to open up new mining fields and keep the older ones active. This involves simple tasks such as clearing asteroids from an area as well as some more demanding assignments – there's one in which you must protect a consignment of ore from an alien which looks like a malignant jellybean.

Although anyone who has seen a *Meteors* clone will recognise the game, there's a whole host of twists and extra features that add a new dimension to the gameplay. For a start, you're not expected to tackle the missions on your own – on certain operations the mining corporation provide you with drone ships that respond to a range of commands. These allow you to shift the drones about individually or force them to copy the movements of the command ship. It's also possible to link craft together and fling objects about using a tractor beam.

With most games of this nature, the controls are straightforward – two keys to deal with rotation, and one to thrust forwards. Command Ship is a little different in that the mouse is used to point to a location on the screen, then the Andromeda pivots round to face that spot. The problem with using the mouse in this way is that it's all too easy to get carried away with the movements and you end up watching in dismay as the ship attempts to execute a double back flip before crashing into the nearest asteroid. The mouse buttons allow you to shoot and thrust, and pressing the space bar freezes your movement and brings up a circular menu of icons around your craft to allow you to control the drone ships. However, the action around the Andromeda continues, and unless you're quick with the mouse it's easy to be caught unawares – normally culminating in a clip round the rocket booster by a medium-sized asteroid. Those people who were fans of *Lemmings* will immediately recall the frantic mouse-pushing that necessitated the use of a good mouse mat.



Looks a bit like *Meteors*

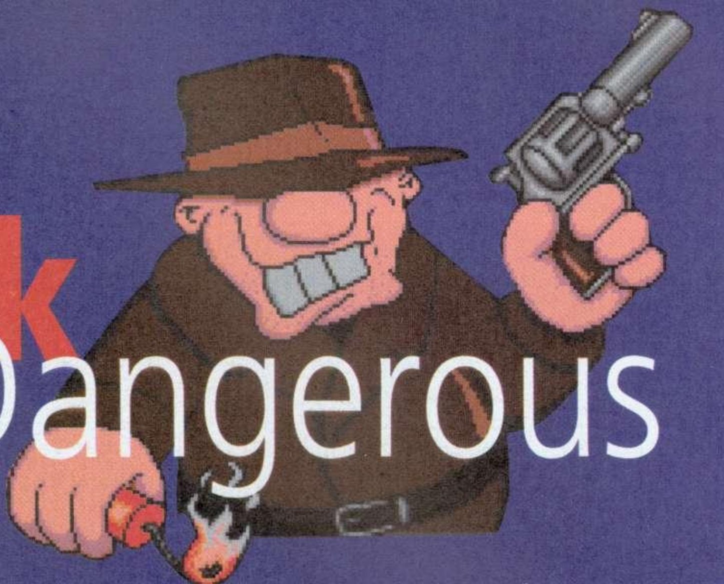
The first missions are fairly simple and are intended to introduce you to the controls – all you have to do to complete your primary task is to shoot a path through a group of asteroids and fly onto the recall pad. After that, they get progressively more involved until you're creating ore spheres by refining shards of meteorite or killing aliens by hurling metal projectiles at them with the aid of the tractor beam. On most of these levels, there are no real clues as to how you're supposed to tackle them, but that adds to the fun as you try out various strategies. The later levels include time and ammunition limits, so it pays to think carefully before you attempt each problem.

The graphics are mostly raytraced and are of a high quality, from the detailed command ship itself to the hunks of rock that traverse the playing area. I particularly liked the animation of the ore funnel – as pieces of asteroid approach they're sucked into its vortex and spiral in to their doom. Once you've collected enough to make an ore sphere, a gelatinous blob oozes out of the machinery in a most satisfying way. Although it's possible for up to four people to have their progress saved between sessions while they're playing, the game itself is one-player only and it isn't really suited for competitive matches.

Command Ship is an interesting departure from a familiar theme, and it works quite well – it's full of innovative ideas that make each mission different to the last. My only criticism is that the content of the levels is fixed so once you've figured out how to complete them, that's pretty much it. However, the levels have a good spread of difficulty and there's plenty of variation in the missions so if you're searching for a game with a balanced blend of strategy and action, *Command Ship* is worth a look.

Steve Mumford

Rick Dangerous

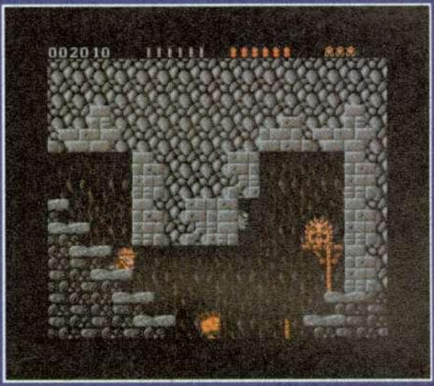


Supplier: The Hitmen Software, 1 Langley Hill Close, Kings Langley, WD4 9HB.
Price: £16.95

Ever heard the joke "How many ravers does it take to change a lightbulb?"

Answer: 100 – 1 to change the bulb and 99 to say how much better the last one was.

Well here we go again in a similar vein with this release of *Rick Dangerous* from the Hitmen, a very old game, a very very old Amiga game shoved onto an Archimedes format. Makes you happy to be alive and own such a machine eh? I mean I've been fighting off the latest original Archimedes games, ask my Mum.



So on with the flares and kipper ties and it's back in time to juggle the joypad. Rick is the character you play and you must guide him through the Aztec temple in Indiana Jones style to ... errr well ... kill things and run around a lot. You have a gun with which shoots things, a stick of dynamite which blows things up and a stick with a sharp end.

To move around is simple, left, right and up and down when you get near ladders. Diagonals make the character jump and good old Rick can duck too.

The game is very responsive in that old Amiga tradition and there are plenty of levels to get worked up about with more and more strange enemies to kill. It has a very professional feel to it, but that's what you might expect with the name Core Design attached to the credits. They are famous for some pretty snappy Sega CD titles if my memory serves me.

That's it! The title is old, the gameplay is average and I'm sure with little else on the market at the moment it will sell a few. Now I'm off to find my old Spectrum to see if there are any games worth converting there...

Steve Atherton

Land Sea and Air

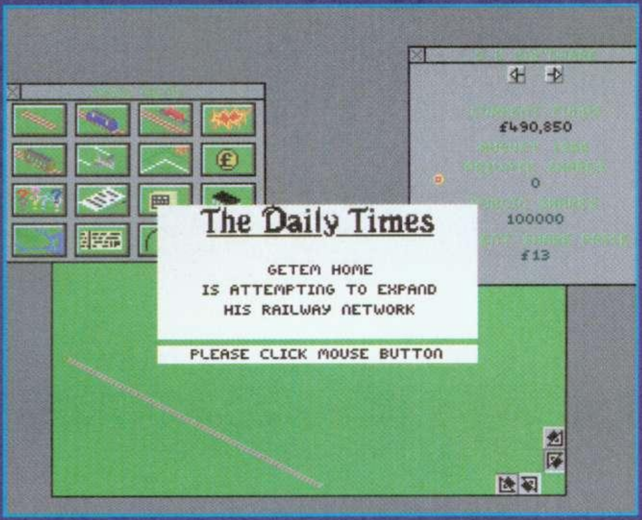
Supplier: UK Software
Tel: 01703 474681
Price: £19.95

I think we can say that this game is not quite an original concept, in fact I'd be very tempted to compare it to another game. Another game I might add that has just about conquered the world and had all genres glued to their monitors. Yep, I'm talking SIM. I'm talking SIM City, Ant, Earth so on and so forth. Got the idea?

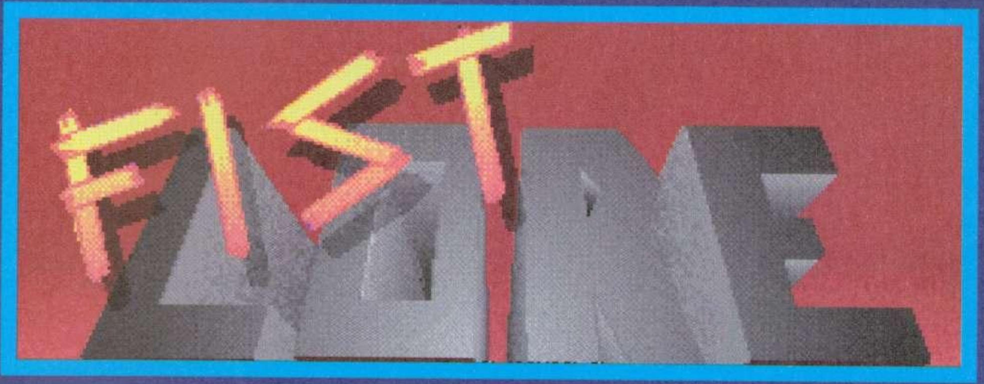
Now here we have *Land Sea and Air*. SIM Transport by what the box makes out. You have to achieve suitable profit over 15 or 30 years by starting various transport businesses and taking goods and commodities to the population areas. You can begin with road then progress to train and even start your own airline. You have control over all aspects of the business like fares, timetables and so on, and after a while – just like the SIM series – it starts to make sense and you actually might make a bit of money.

To be honest, this really doesn't have the looks of the SIM series and it lacks the general professional feel. I know I might be a bit cruel comparing it in this way – it's also much cheaper – but you can't help it. On the plus side I quite enjoyed myself, in a grown-up sort of way. It might take quite some time before you are confident in all areas so if longevity is what you look for you could do a lot worse.

Steve Atherton



Supplier: Ian Copestake Software
Tel: 0151-625 1006
Price: £29.99



To date, the Acorn hasn't had many beat-'em-ups to boast of – it's a style of game that hasn't really made its mark on our platform yet. Hoping to change all this is a team known as Mystery Software, who have just released *Fistlore* through Ian Copestake Software. It aims to cover all the standard features of the fighting games made popular on the various consoles on the market – including a selection of backdrops taken from around the world, oversized sprites and, of course, a collection of special moves that remain secret until you stumble across them.

If you've never played this style of game before, the idea is quite simple. Each character's strength is represented by an energy bar, and once the fight begins you have to use all your skill and cunning, or barefaced luck, to make as many dents in it as possible. Each bout is timed so if you haven't annihilated your opponent before the clock runs out, the person with the highest energy remaining is deemed the winner.

One of the factors that made this style of game so popular on the consoles was the fact that the joypads positively bristled with a plethora of buttons, making more combinations possible while simplifying some of the straightforward attacks. Fistlore uses four direction keys and one fire button for each player, so how does it compare? Controlability is a key issue in this genre; since the feeling of involvement relies on positive feedback, if Sven the Fighter doesn't leap in the air when you want him to, or Cammy the Gymnast is a little sluggish performing her pirouette, the player loses interest quickly. How does Fistlore fare? I felt that the movement was somewhat 'clunky' and in some places it was as if the fighters were made of clockwork. Because of this, it was harder to get to grips with the control and although I have a feeling that I managed to release one or two special moves, they were particularly hard work.

There are plenty of options available to customise the gameplay – as well as the obvious head-to-head mode in which you can duel against a friend, it's possible to alter the skill of the computer players and tailor the graphics settings to match the speed of your computer. True to certain other games I could mention, there is even a 'gore' option – although it's not quite as brutal as *Hamsters*, you might want to turn this off if it offends your sensibilities.



After you're satisfied with your choices, it's time to pick one of the seven characters available in the game, each one presented with a short life history explaining why they're involved in the first place.



Characters digitised from photographs and attractive backdrops add to the look of the game.

The sprites have been digitised from actual pictures to try to add that extra feeling of realism; it appears that some detail has been lost in the process of scaling them down for use in the game, but the effect is still there.

The backdrops are varied and colourful, from Oriental courtyards to the depths of the rainforest – you even get flakes of snow falling gently to the ground in one of the levels.

The full range of moves is catered for, from standing and crouching blocks to all manner of kicks and punches. They're made accessible via a list of key combinations, so it takes a while to commit them all to memory.

The learning curve is pretty steep; even on the 'poor' level, the computer players are capable of inflicting a severe bruising if you don't keep your wits about you.

As the authors suggest, it's probably a good idea to set the game to its two player mode and practise on a stationary target – even so, patience is most definitely a virtue here.

Fistlore is a good first attempt at an Acorn version of *Streetfighter*, but there's still a long way to go – all the ideas are in there, but it needs more polish before it's on the same par. Still, congratulations should go to Mystery Software for attempting this undeniably difficult task, and I hope they're able to continue their work in this field.

Steve Mumford

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Acorn User has teamed up with Internet provider Zynet to offer an Internet connection package tailored for schools.

Zynet Ltd is the sister company of Minerva Software, who recently celebrated ten years as a supplier of educational software to the Acorn market. Zynet has been an Internet provider in the South West since 1994 and has recently expanded with 61 new POPs to cover most of the UK; It is a provider in its own right, and does not sit on the back of another provider such as Pipex.

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Letters

Marketing Acorn

In the last two issues we have said goodbye to three highly influential figures in the Acorn market. Firstly, we had the untimely and tragic death of Mark Colton – although I am not a user of Colton Software's products I hope that its future is secure within the new organisation as diversity of product offering is vital. Secondly, we had the resignation of Sam Wauchope – although the latest results from Acorn are disappointing, his enthusiasm for 'our preferred platform' was quite inspiring and I'm sure that this will be missed by all at Acorn House; I hope that it will be picked up and expanded upon by his successor David Lee. Finally, we say goodbye and good luck to Mark Moxon, the last remaining member of the full-time *Acorn User* staff from the Redwood publishing days.

So, the real reson for Sam Wauchope's resignation has come to light – the financial results were awful. Yet, perhaps someone can explain to me why Acorn's shares are currently trading at 109p (just 1p lower than its year high) and the highest for some period of time. Not only that, but as a result of the share option there are many more shares in circulation – probably the most since the Olivetti take-over.

By the way, remember the doom and gloom merchants of three years ago? When IBM posted losses of $5 billion they were written off – they made a $2 billion loss the following year as well and were dead and buried – today they are profitable. Who says they never come back?

So, after all this trauma, does Acorn have a future? I believe it does and – given the right marketing – a very good future. By marketing, I do not believe that full-page colour advertisements in the major computing magazines or TV advertising are the answer. They may be if you have pots of money but Acorn does not. No, the future, I believe is in developing partnerships and co-operation with dealers, developers and influencers (both positive and negative) to enable the message to get across.

Before anyone asks – no, I do not sell Acorn computers, but I used to be responsible for the sales of babymilk to hospitals in the South East of England. What has that got to do with computers, you may ask? Well, when did anyone last see a consumer advert or TV commercial for a babymilk? The answer is, not for over 10 years in the UK; they are banned by law. However, in my time in office, a small British manufacturer in third place in South East England became market leader. How? By developing partnerships and sponsorship with healthcare professionals – the middle men or women in the healthcare market.

So, if this company with a turnover even smaller than Acorn's can move up using these techniques then, with the right attitude and commitment I'm sure that Acorn can do better. If anyone at Acorn House is reading this then call me – I am a Clan member and I come cheap.

Yes, Acorn may change. It may start selling re-badged PCs and Macs, it may not be the same friendly organisation, but with Peter Bondar heading up ART I am sure that development of 'true' Acorn hardware and software will continue. Having spoken to Peter at previous Acorn events I know a true fan and enthusiast when I meet one and Peter is all of that – more power to your elbow, Peter.

Now, some Acorn fans will be saying 'selling PCs and Macs is not what we stayed with Acorn for', but think about it – why not? If by selling so-called industry-standard platforms our company makes money and enables the research and development os Risc PC hardware and software technology then we should welcome it with open arms. And if the relationship between Acorn and IBM develops then it must be totally to our advantage – it might even make PCs easy to use and improve RISC OS by adding tools that we haven't got but desperately need, now.

No, despite all the bad news



The Acorn SchoolServer – Acorn's first PowerPC-based machine. Should we welcome it?

and the changes, let us all be positive about this and continue to support a platform and a lot of excellent software that, pound for pound, puts most PCs to shame. If anyone needs convincing further, look at the Moxon Interview with Martin Littler – 'I think that in two years' time we'll see the three platforms converging; you won't be able to sell a machine unless it runs all three forms of software. Times are changing.'

Think about it a little further – do PC or Mac manufacturers have the ability or the desire to achieve this at a competitive price? I think not, but to borrow AA's saying, 'I think I know a company who does'.

Keith Parker
Twickenham

Well, yes, if you don't have the money to advertise, then a law preventing your competitors from doing so too is bound to be to your advantage.

How about it ASA? No more of those Intel Inside adverts with that annoying oriental-sounding jingle at the end? I don't think that it is very likely, which knocks the babymilk analogy on the head somewhat, I feel.

Acorn is never going to be able to sell re-badged PCs as cheaply as the original manufacturers, so the motive for selling them isn't simply one of profit. It has a lot more to do with opening up new markets and opportunities which would previously have been closed to Acorn because it didn't offer the right machines. (DM – see Viewpoint)

Reference library

I have been a loyal reader of your magazine for some time now. I read it for a wide range of topics, games, hardware, public domain and especially programming. Within the last six months I have 'run into a brick wall' with my programming; I am in grave need of the PRMs but on my budget cannot afford them, like so many other people, no doubt. However, one thing that I *can* afford is your magazine (obviously), so that's when I came up with the idea of another article for your magazine.

You could, each month, publish a few pages out of the PRMs. Obviously you might run into copyright problems, but thee is nothing to stop you re-wording everything. However, there is one other problem, and that is the mere (sic) quantity of the PRMs. At a

rate of about five pages a month to publish it all could take half a lifetime.

You could overcome this in one of a number of ways. Firstly, you could cut down the size of each command description in places that are extemely complicated or just plainly too long.

Secondly, you don't have to publish every command, meaning that there are a fair few calls that most people would never use (and the people that are techies enough to use them probably have the PRMs anyway) so why publish them in the first place?

Even if doing this still proved too much to print, you could still tell people about it in advance and have them request what areas or specific calls to print.

If this idea gets off the ground, I think that it will prove to be worthwhile as long as there are enough programmers/beginners out there who want to read the column. You can certainly count me as one.

Andrew Halliday
Adelaide

The quantity of the PRMs is certainly a problem. In fact, to quote *Grace Under Fire*, we could fit all our other problems into this problem and *still* have room for Mongolia.

The Programmer's Reference Manuals are just that; works of reference. It is notoriously difficult to translate a reference work successfully to a series of articles in a magazine, even one that goes on over several years. The key point about the PRMs is that all the information you need is there, in one place, not scattered through several magazine binders interspersed with reviews of needlepoint software and interviews with Martin Coulson's cats. If you need the PRMs then you need the PRMs – the only possible substitute is Alternative Publishing's PRMs on CD-ROM.

Having said that, there's definitely a place in the magazine for programming tutorials. Many hints and tips can be gleaned from the *INFO section, especially if you look at how some of the BASIC programs are written, and from time to time we will certainly be going beyond that. (DM)

If the caret is inside a writeable icon, the Wimp automatically processes the keys listed below, and does not generate an event:

Printable characters	are inserted into the text, if there is room, and the icon is redrawn
Delete, <–I	delete character to left of caret
Copy	delete character to right of caret
<–	move left one character
–>	move right one character
Shift Copy	delete word (forwards)
Shift <–	move left one word (returns &19C if at left of line)
Shift –>	move right one word (returns &19D if at right of line)
Ctrl Copy	delete forwards to end of line
Ctrl <–	move to left end of line
Ctrl –>	move to right end of line

'Printed characters' are those printable ones whose codes are in the ranges &20 - &7E and &80 - &FF.

Clashes could occur between top-bit-set characters (obtained by pressing Alt plus ASCII code on the keypad) and special key codes. The Wimp avoids any such ambiguities by mapping the special keys to these values:

Key	Alone	+Shift	+Ctrl	+Ctrl Shift
Escape	&1B	&1B	&1B	&1B
Print (F0)	&180	&190	&1A0	&1B0
F1 - F9	&181 - 189	&191 - 199	&1A1 - 1A9	&1B1 - 1B9
Tab	&18A	&19A	&1AA	&1BA
Copy	&18B	&19B	&1AB	&1BB
left arrow	&18C	&19C	&1AC	&1BC
right arrow	&18D	&19D	&1AD	&1BD
down arrow	&18E	&19E	&1AE	&1BE
up arrow	&18F	&19F	&1AF	&1BF
Page down	&19E	&18E	&1BE	&1AE
Page up	&19F	&18F	&1BF	&1AF
F10 - F12	&1CA - 1CC	&1DA - 1DC	&1EA - 1EC	&1FA - &1FC
Insert	&1CD	&1DD	&1ED	&1FD

1198 The Window Manager: SWI Calls

Here is your token PRM page for this issue – over 2000 to go and that's not even counting volume five.

Viewpoint

At the time of writing, Acorn's shares are standing at 215p, with every expectation that they'll rise higher than this. Naturally editors of Acorn computing magazines don't have any Acorn shares, partly because the opportunities for insider trading would be too great but mostly because we don't earn enough to buy any. Nonetheless, we are very finally attuned to how the City views Acorn, and suddenly it can't buy shares in it fast enough – why?

It's well known that the latest craze on the Stock Market is the Internet and communications. Companies in these areas have seen their shares trading at very respectable levels recently, as everyone has finally accepted that the Internet *is* catching the public imagination and might just be around long enough to outlast the Christmas rush.

As reported in the news, dice are rolling among the big names in the computer industry, and some people in to are convinced that the 'Get out of Wintel free' card belongs to Acorn. What they are after is a network workstation which boots up from ROM, needs no floppy or hard drive (or any moving parts at all, in fact) and downloads software and information at run-time over the network. Take the floppy drive out of an A7000 NET and add a little Online Media set-top box technology and you have a ready-made solution. What's more, people outside Acorn have noticed.

This is big-league stuff. The rumoured NetSurfer box – an all-in-one Internet box which plugs into your phone and your TV and lets you surf the net – is only one variable in the equation. Businesses will want an Ethernet version which is designed for browsing accounts, project reports and spreadsheets rather than the Web. Cable companies will want one that handles video-on-demand. Schools will want an educational version. If this takes off in the way that Acorn and its prospective partners hope that it will do, then there will be more of these boxes built than there were of the entire Acorn range. You can see why the Stock Market is interested.

There are certain dangers for Acorn here; it is a sparrow sharing a nest with condors. However loyal we may be to Acorn, it is an inescapable fact that a company like IBM could buy Olivetti's shares in Acorn on a whim, out of loose change. It might do it too, if it thought that this small UK company had the technology of the future.

This wouldn't necessarily be the end of Acorn, of course. In fact, given that one of the reasons that Acorn technology is so attractive to these people is the ROM-based RISC OS, anyone buying Acorn would have a keen interest in keeping RISC OS alive. There's no getting away from the fact that this would change the character of Acorn dramatically though – however much it may value the input of a few thousand enthusiasts now, it would simply not be able to do so to the same extent if it were counting its sales of (hypothetical) NetSurfer boxes in the millions.

If it gets it right, though, both Acorn and RISC OS will do incredibly well out of this deal. Acorn has teased defeat from the jaws of victory before, but this time it really has no excuses. It has the right product at the right time, and a lot of influential people out there talking about it. Acorn won't have to market, distribute or manufacture the product, as others will do that for it; all it has to do is licence the technology.

Of course, really this is just more Internet hype. The Internet is a fad, like Rubik's cube or console games and will, in the long run, be replaced by something designed to have a substantial population of the world accessing it at once. In the short term though, Acorn is in an ideal position to cash in; in any case the product in question is not exclusively an Internet device – it's got a lot more potential than that.

We, and Acorn, live in interesting times.

David Matthewman

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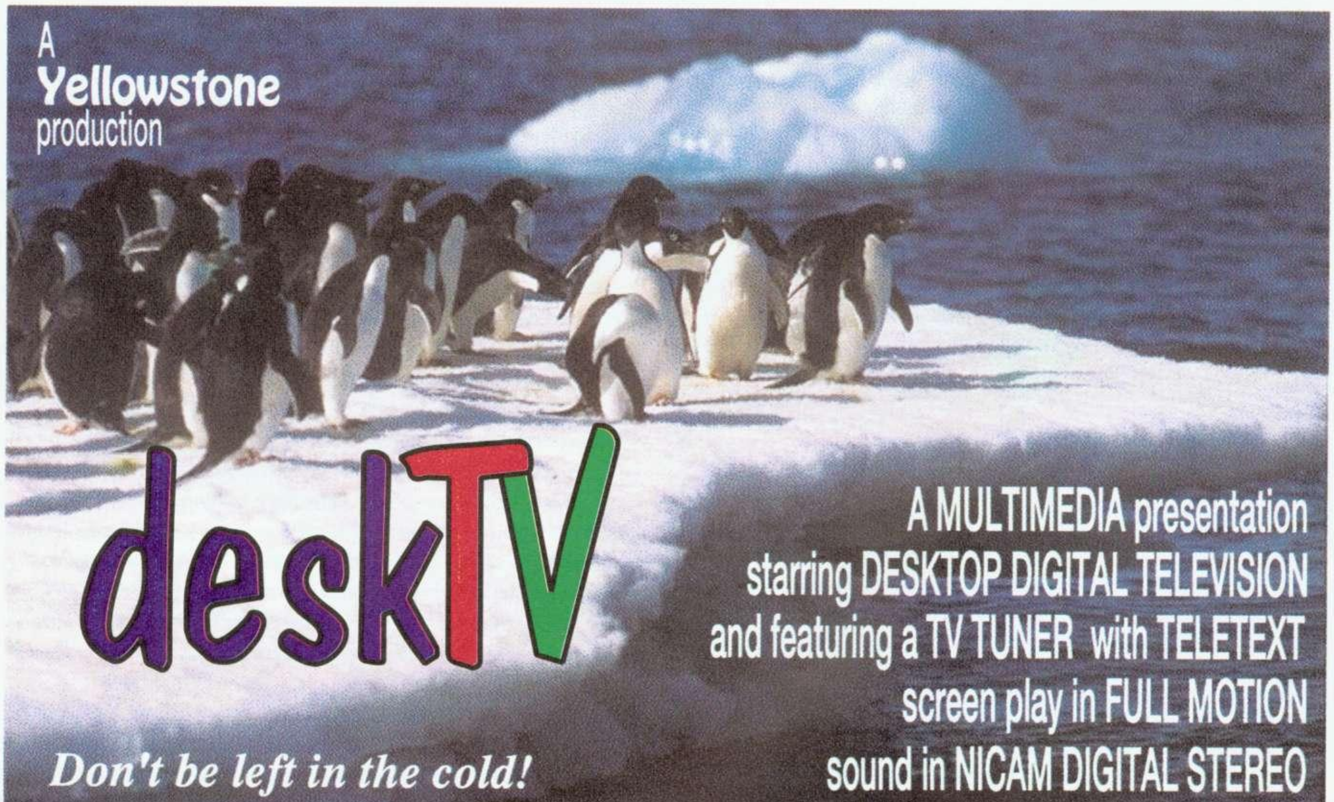
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RISC OS is dead?

SOME people I have recently spoken to have indicated a degree of pessimism about the future of RISC OS. In light of the recent changes at Acorn, this is perhaps understandable, but I feel it is a mistaken view. I find it very encouraging that software houses are showing quite the opposite view and are backing their optimism with the production of some sound products which exploit the power of the platform; for instance the CD-ROMs reviewed in this issue.

These products represent a considerable investment for their producers. Rather than reducing their output of RISC OS-compliant software, many seem to be stepping up production. I believe much of the negative opinion stemmed from the fact that several companies previously known for Acorn software are now diversifying and producing software for Windows and Macintosh. Of particular note, dual or even triple format CD-ROMs are now not uncommon. But we don't often hear of companies producing programs for the Acorn platform who were previously known for Mac software. This is simply good business sense and not a wholesale abandonment of the platform.

The evidence is there - more and more Acorn native material is landing on my desk to be reviewed. RISC OS is dead? Don't you believe it.

Hear Hear

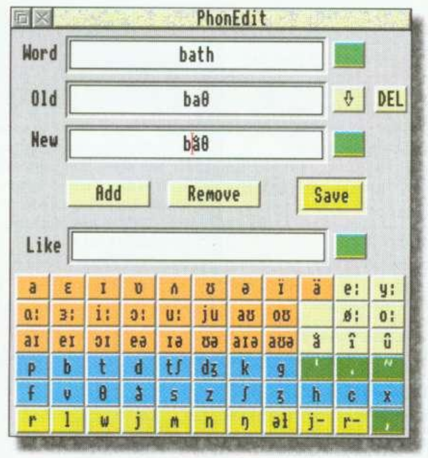
BASICALLY, there are two ways of generating voices on a computer. The first is to replay digitally recorded speech. This produces the clearest speech but at a price: storing every conceivable phrase required for a specific task consumes huge amounts of storage space.

The alternative is to store all the different sounds that go to make up what we understand as speech and assemble the parts in the required order to simulate speech. This system has the advantage that virtually anything that a human can say, the computer can say without using vast quantities of storage. The downside of this system is that the computer voice usually sounds like a Dalek undergoing some hideous torture.

Speak by Jonathan Duddington is about the best speech synthesis program I've come across on the Acorn platform. Considering the 'poor design' of the English language, *Speak* does a pretty good job of applying reasonable pronunciation to the majority of words in common use. This is partly because Jonathon has included a pronunciation exceptions editor enabling the system to 'look up' the correct pronunciation of the words.

Speak can be made to read a text file or alternatively reside alongside a text editor (*Edit, Impression, Ovation* or the like) and speak the words as they are typed. This system has been adopted by several companies for 'talking' versions of some of their products (*Textease, Clicker, TalkWrite* and *Writing with Symbols*).

It still sounds a little robotic, but produces very recognisable speech especially when output through decent speakers. I find it very useful for reading the obligatory *ReadMe* files which seem to be on most discs these days, and for reading through my e-mail. Really. I download all my mail to a text file, strip out all the rubbish (control codes, headers and so on) and let the system read to me. I can then take notes on my Pocket Book or get on with something else while I'm being read to.



Sounds can be tailored using the phonic exception editor.

Speak costs £19.50 inc VAT from Jonathan Duddington, 6a Old Mill Avenue, Coventry, CV4 7DY, tel: (01203) 415535.

Contacting me

You can contact the Education page by writing to me, Geoff Preston at *Acorn User*, Media House, Adlington Park, Macclesfield SK10 4NP or by e-mail to: gpreston@arcade.demon.co.uk

Tessellations revisited

I'M always delighted to receive letters from school children especially when they include some of their work. Following on from the review about *Versatile*, Rinesh Patel and Chris Neale (both aged 10 from Mansbridge School in Southampton) wrote to me showing how they use *Draw* to make irregular tessellating shapes. Full instructions are on the cover disc; thank you Rinesh and Chris. You can see *Versatile* on Longman Logotron's stand No 261 at BETT.

Internet for Schools?

I CAN see great potential in the use of Internet in school but I'm still uneasy about opening it up to students to access as and when they like. The material to which they will have access can often be totally unregulated. Only recently there were reports of a boy losing a hand after trying to make fireworks – there was some suspicion that he had downloaded the instructions from the Internet, although there are plenty of other sources for this sort of information.

Had that information been downloaded in school, the burden of responsibility would doubtless fall to the teacher. As a Head of IT, I really don't need that additional headache. It is therefore vital that, when you connect to the Internet, you filter the access to newsgroups and web sites for your students, and keep a close watch on what is actually being downloaded.

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The latest CD-ROMS

Hot on the heals of Geoff Preston's CD-ROM roundup No 3, we already have No 4.

When I first started reviewing CD-ROMs about a year ago, I didn't envisage it would become a series. Once I established it would be, I thought I would review about a half-a-dozen twice a year. Just as the last review of 10 CD-ROMs went to press, I found there was enough material for another round-up. These represent what I believe are the best of those I've seen. Humanities teachers will surely find something here: of the nine discs covered, four are for geography and two for history.

Britain since 1930

£25 + VAT from Anglia

This disc contains data for Anglia's *Key* data handling programs so unless you use *Key*, it won't be any use to you which is a great shame because it contains some excellent material. Britain since 1930 is one of the History elements of the National Curriculum and many teachers will be sorry they can't use it. The good news is that *Key* is relatively cheap and it should be possible to split the cost between the various Humanities departments thus enabling them to use the other Anglia *Key* CD-ROMs.

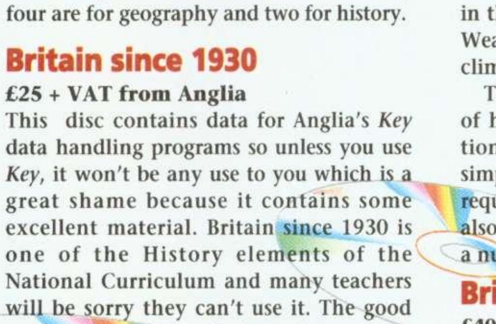
The World's Weather

£50 + VAT from Anglia

The current state of the weather seems to be Britain's favourite topic of conversation. It's hardly surprising when you consider that during most of September I felt as though I would spontaneously combust, and now, just weeks later I'm writing this on a dreary, damp and cold morning.

Perhaps this was the reason Anglia produced this stand-alone disc which contains everything you ever wanted to know about the weather in this country and the rest of the world. I can't imagine there is anything not covered. The disc is divided into four sections and topics include Processes in the atmosphere, Changing seasons, Weather and climate and Life in different climate zones.

The disc contains Anglia's usual blend of high quality photos, drawings, animations and video sequences together with simple informative text. Searching for the required information is simple and there is also the usual resources folder containing a number of printable worksheets.



Everything you wanted to know about *The World's Weather* – a fascinating subject.

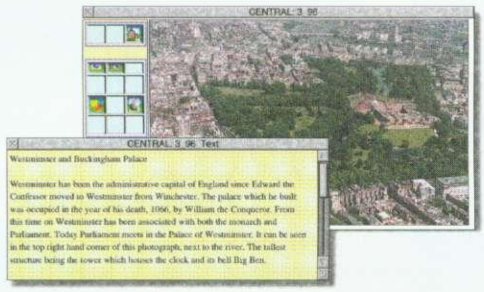
British Isles from the Air

£40 + VAT from Anglia

Aerial photographs appear to be the rage this month with two offerings from two sources. Geography teachers will love this one - over 230 aerial photographs taken from around the country.

For the nostalgic, several were taken some years ago and it's really interesting looking at places you used to know before progress came along. The disc begins with a map of Britain over which are placed a number of dots. Click on one of the dots and you get a photograph and some accompanying text. Other information includes resources in the local area.

You need to be very accurate with the mouse when choosing a photograph and unless you have an atlas by your side or a very sound knowledge of the exact location of every city in the UK, selection can be a bit of a lottery. I had five attempts to get the picture of Cambridge, but I suppose that's all part of learning. A really good piece of software and very well priced.



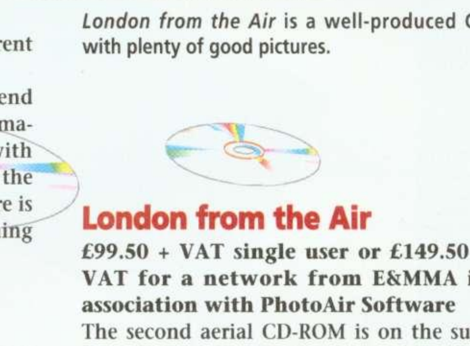
London from the Air is a well-produced CD with plenty of good pictures.

London from the Air

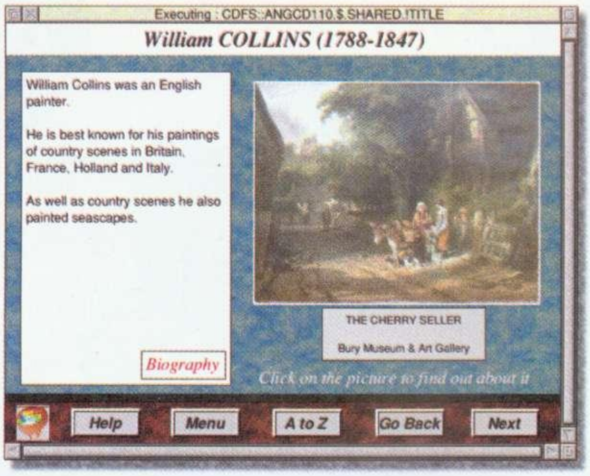
£99.50 + VAT single user or £149.50 + VAT for a network from E&MMA in association with PhotoAir Software

The second aerial CD-ROM is on the subject of the capital rather than the whole country. Although the photos in *London from the Air* appear to be slightly better quality than Anglia's disc, many have been taken from quite an altitude so it's not always easy to pick out specific places.

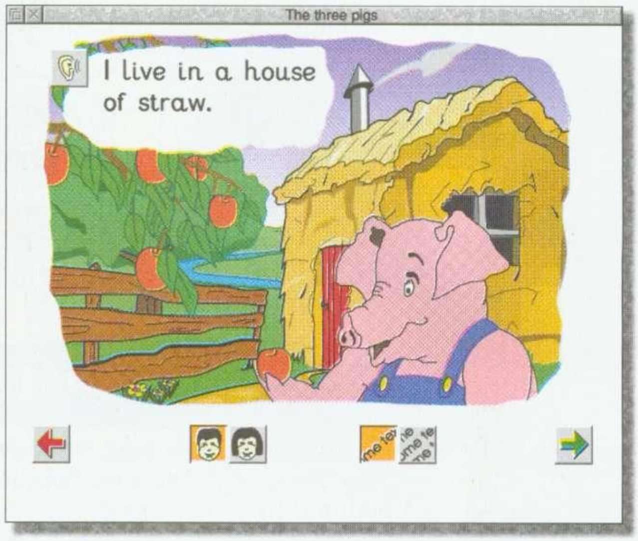
The CD-ROM contains seven linked *Genesis* presentations on Urban Regeneration, Urban Greenspace, Urban Changes, Urban Transport, Urban Tourism, The Thames and Function Clustering – enough to whet the appetites of geographers up



Superb aerial photographs with clear explanations make *Britain from the Air* a must for geographers and for those with a sense of nostalgia.



A curious subject area, but gives fascinating information about people creating *Animals in Art*.



Three Little Pigs is another talking story. A well-worn theme, but this one boasts lively presentation.

and down the country. Each picture has a lengthy description written in an easy style which is never dull. This is a fine piece of work and is easily as good as Educational and Multimedia Associates' previous CD-ROM: *Langdale*.

One small grumble is that a couple of the subjects were not covered as well as they could have been. In particular, there is a section on underground stations which could have been really interesting but included less than a dozen pictures. I assume this is because the authors ran out of space on the disc. If this is the case, they might have done better had they discarded the half dozen Replay files and included some stills of some other stations, but this is a minor criticism.

Animals in Art

£40 + VAT from Anglia

Art is not a subject which has been very popular with Acorn CD-ROMs. Given that the Acorn platform can display graphics so well, this seems rather surprising. *Animals in Art* sums up the contents perfectly - it contains information about every artist who's ever drawn or painted anything feathered, fowled or four-footed. Although you would think this disc probably works best on a Risc PC, the images look very clear when viewed in 256 colours on a reasonable monitor. Apart from the pictures, there's a short piece of text about the artist and each of the paintings.

The Three Little Pigs

£25.49 + VAT inc licence from Tempest Publishing

This is a 'talking story' disc with some additional games to add to the interest. Every sentence seen on the screen can be made to speak by clicking on the 'ear' icon. Alternatively, individual words can be spoken by clicking on them. The sound output is digitally recorded and very clear with the choice of a male or female voice. The disc takes readers through the story of the *Three Little Pigs* allowing them to read or hear the story.

Also included are nine activities (which the software refers to as games), dressing one of the pigs, colouring and word match. The graphics are bright and clear and the presentation is lively and will appeal to the three to five age range for which it is intended.

Electronic Books

Prices from £30 + VAT from Cumana

If you bought a proTeus drive through the Acorn User/Cumana offer, you will have received a copy of *PaperOut* and may be wondering what to do with it. *PaperOut* is a program which enables your Acorn computer to read Electronic Books which were originally for the Sony Data Discman. These 8cm discs contain mainly text although there are some graphics on some pages.

The beauty of these discs is two-fold. First, because they don't contain lots of graphics, access is very fast. Second, they're very cheap: some titles cost as little as £30. There are some excellent titles which will be of use both at home and school. In the April 1995 issue I mentioned *The Oxford Dictionary and Thesaurus* containing 190,000 definitions, 275,000 synonyms and an amazing 150,000 cross-references and said that for the cost of *PaperOut* and the actual disc, this represented very good value. If you got *PaperOut* free with your proTeus this must now rate as being about the best value dictionary available in any format (including paper).

Cumana stocks several titles, but my no means all. There are over 250 titles from 10 countries with prices starting at £15. Electronic Book Publishing produces a 78-page catalogue called *ebcat* which lists them all under the headings Dictionaries, Reference, Business & Professional, Science & Technology, Language & Travel, Entertainment & Sport, Leisure & Lifestyle and Literature. If you do decide to choose CDs from this catalogue, avoid those in Japanese as the Acorn won't cope with the character set.

The First World War and its Consequences

£99 from AVP

This is another disc from the highly successful *PictureBase* series. As with all *PictureBase* discs, the data is controlled by an application called *PicBase* which is supplied with each disc and which must be installed on to a hard drive (see the November issue of *Acorn User*).

The result is a program which can invisibly access any of the installed CD-ROM discs and presents a common interface for all discs in the series. As the title implies, this data file relates to WWI and issues surrounding it. There's not really much more to say about it. The datafiles are of a consistently high quality (both text and graphics) and the fact that there is a common user interface makes it very easy to navigate through the material. If you want

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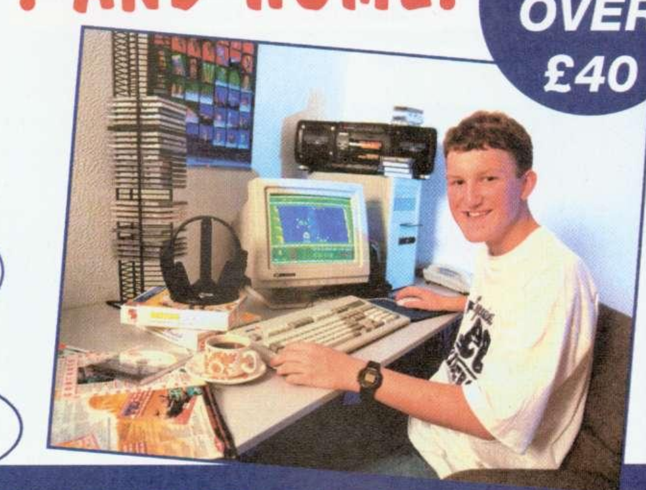
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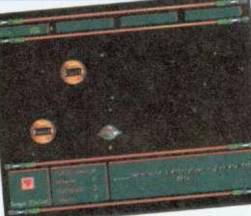
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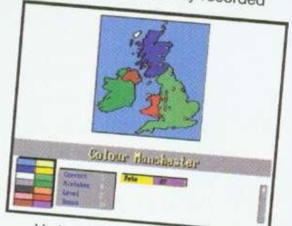
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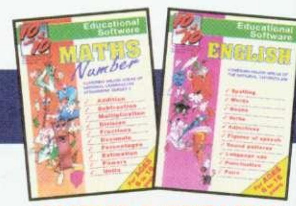
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to find out more about World War I, this is the place to come.

Mechanisms

£69 + VAT single user or £99 + VAT network from CCS

This CD-ROM has been a long time coming, but is well worth the wait. Like other CCS CD-ROMs, *Mechanisms* is dual format (Acorn and PC) although you don't get the video sequences on a PC. It's a *Genesis* application and is well put together although the presentation could have had a little more time spent on it. It covers the eight common types of mechanism: cams, pulleys, gears, levers, crank, chain and sprocket, linkages and inclined planes.

Each is explained with relevant examples taken from home and industry, and illustrated with line drawings, photographs and video clips. Scientific formula and theory are also included in the descriptions, making this CD suitable for physics as well as technology. Some historians covering the industrial revolution should also be able to make some use of the historical examples. The cost of the disc includes a comprehensive resource pack. Look out for the next in the series - *Structures* – which should be available later this year.

Map Skills

£49.99 + VAT from Cumana

If anyone thinks that producing a multimedia CD-ROM with a generic authoring tool is second best, you'd better think again. *Map Skills*, published by Pebbleshore, is a *Genesis* presentation and, in my opinion, was the best new product on display at Acorn World by a wide margin. This disc is a credit to all those involved in its production – mainly teachers, I understand.

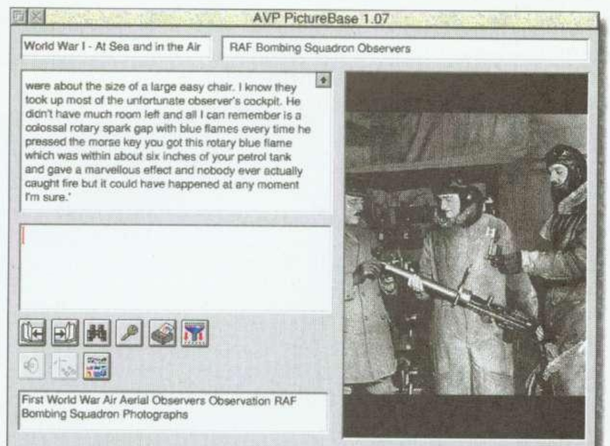
Aimed at Key Stages 2 and 3, *Map Skills* is in two parts. The first is a tutorial which takes you through a series of sections under the headings: What kind of map?, What will we see?, Where are we?, Which way? and How far is it? Each screen shows a map, an accompanying statement and sometimes a photo.

There are video sequences and the part I like best is the signpost on which you click to take you from one place to the next. The only thing missing is speech which would help some of the younger ones who have reading difficulties. That aside, the work is well thought out, well presented and is very appealing to students studying what for some, can be, a rather dry topic (apologies to geographers). It is also very pleasing to see that the cartoon characters used are not exclusively white males. The software is accompanied by several worksheets and two Ordnance Survey maps; one of Plymouth and one of Telford. Sections of the tutorial refer to these maps although other areas are also studied.

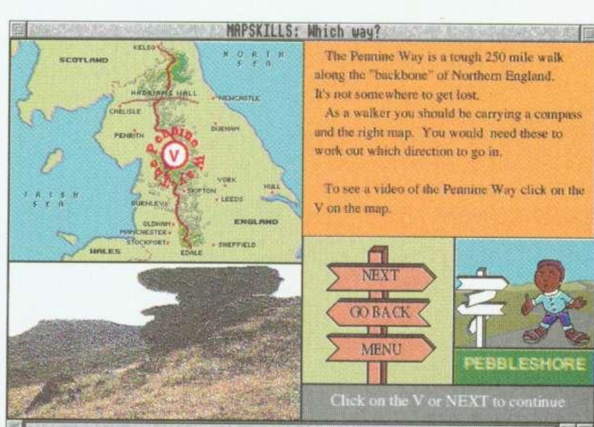
The second part of the software is a quiz and again the maps come in handy. Unlike many quizzes, you get more than one chance to answer each question: if you're wrong you get an explanation as to why and if you've got it correct, some information confirming the fact. The CD-ROM, maps and worksheets are supplied in an A4 binder and should be in every geography department in primary and secondary schools. AU



Mechanisms has excellent content although the presentation is a little drab.



Apart from the high quality text and graphics, the great strength of AVP's *PictureBase* series is consistency of interface.



Map Skills is well produced and well presented. This is a product by which all the others will be judged.

Useful contacts

(BETT stand numbers included)

Anglia Multimedia (357)
Tel: (01603) 615151
Fax: (01603) 622191

AVP (355)
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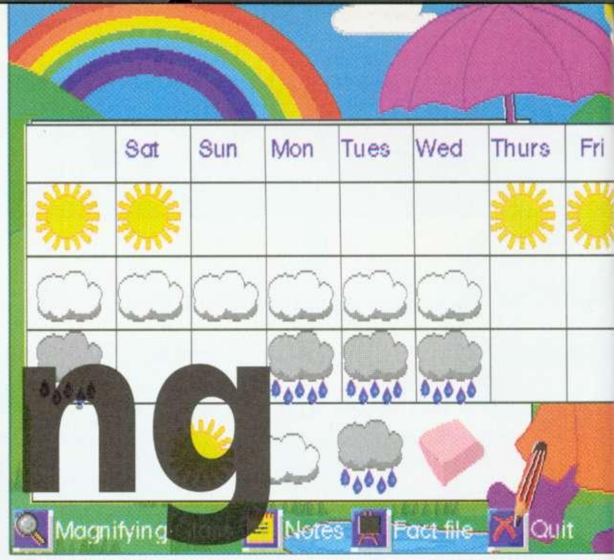
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Primary science software



Smudge keeps a record of the weather.

Smudging the results

Colin Rouse meets Smudge the spaniel to investigate science.

With exciting adventures and clear bright screens, Smudge the Scientist, a new package from Storm Software, introduces the world of science to primary school children, hoping to capture their imaginations and spark an interest in science from a young age.

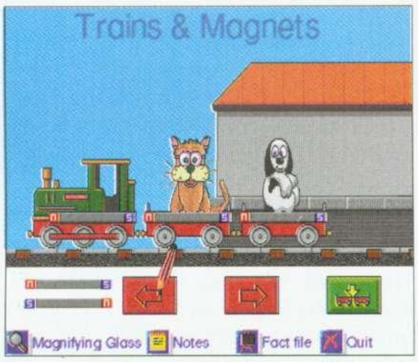
Smudge the spaniel with a little help from his friend, Ceciley the cat, sets out to discover various scientific facts on such topics as electricity, magnetism, floating and sinking, seasons and weather, decay and living processes, having a lot of fun along the way. Children are helped to understand the scientific principles behind the tasks being undertaken by Ceciley, who is always asking questions of the how? why? and what will happen if? variety.

Getting started

Smudge the Scientist comes in an attractive three-disc pack with accompanying notes for teachers and parents. Concise and well-written booklets guide the children through the tasks and offer follow-up activities to reinforce the ideas and concepts contained within the package. Children throughout the primary age-range would find the ideas contained in these booklets useful starting points for further scientific investigation, although the younger ones would need help with the reading.

As with any new software package, it would be advisable for teachers or parents to work their way through it thoroughly before using it with their children. It is well worth reading the booklets and manuals before using Smudge to familiarise yourself with the conventions used.

The program is user friendly with options to start at easy entry points, if needed. Another very useful option is the ability to print the very good graphics and animations to enhance work away from the computer. Smudge does not attempt or pretend to replace essential experimentation but will fire the enthusiasm, reinforce the theory and help when practical experimentation is not possible.



Can you help Smudge with his magnetic train?

In the classroom.

I have used this software package with both Year 1 (5 and 6-year-olds) and with Year 4 pupils (8 and 9-year-olds) equally successfully. A high teacher input gave the best results with younger children while older children were able to use the package independently after an initial introduction to the program's main features.

The opportunity to work at different levels proved extremely useful and the icons provided the children with facilities that were particularly helpful. These included a magnifying glass to provide a closer view or to observe something that wasn't usually seen, a notebook to record observations and results, a factfile to select more information on a particular aspect of the work in hand and the weather symbol to see a record of the weather conditions if relevant.

There are also facilities to gain on-screen help, especially useful if a group of children are having difficulty with a particular task. You can open a control menu to select certain tasks and a print menu enabling the teacher or pupil to print screens as an aid to presenting their work in an interesting way.

The younger children were particularly stimulated by the superb graphics and by Smudge himself. They found it easier to use the function keys than the mouse to select a particular option. A function key strip may be helpful here, so I've put one on the cover disc, along with a couple of other Smudge-related draw files.

It was particularly interesting to see how the different ages of children approached Smudge with both groups gaining a lot from the package in different ways. The Year 1 children were fascinated by the visual effects and learned through experimenting on-screen while the Year 4 children, although happy to work through the on-screen experiments, made much more use of the software's other features such as the notepad, the factfile and the magnifying glass.

Conclusion

Smudge the Scientist would prove a very useful addition to any school's science resources at both Key Stage 1 and 2. The package helps children foster an understanding of basic scientific principles and develop the skills necessary for scientific observation, such as the ability to observe, record, present and discuss their findings.

It is easy to use and stimulates children's interest in science through its original approach to the subject matter and the interesting ways in which this is presented. Both my pupils and I have thoroughly enjoyed using *Smudge the Scientist* and we all look forward to the next instalment. AU

Product details

Product: Smudge the Scientist
Supplier: Storm Educational Software
Tel: (01935) 817699
Fax: (01935) 817699
Price: £45.99 for single user, double for site/network licence

Pros: Easy to use • Good graphics • Well thought out

Cons: Younger children may need help with the text

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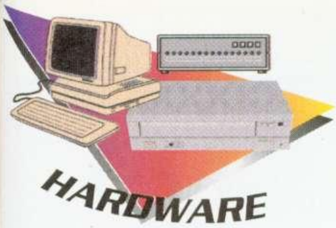
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Run the RISC

Mike Cook goes in for a bit of joypad unravelling.

IT sometimes appears in articles that projects have a smooth transition from concept to implementation, but this is not always the case. Sometimes initial ideas prove to be very wrong. While this can be quite frustrating at the time, with perseverance it can lead on to a greater understanding.

It all started with a simple request: 'Dad can I use this on the Acorn?' This, turned out to be a Sega Joypad. Well it's simply a set of switches isn't it? So I said yes. Plugging it into a conventional joystick socket did work but only for some of the buttons. The four direction switches mimicked the four switches of a conventional joystick and one of the buttons acted as the fire button – but what about the others?

Well if you count the total number of buttons on a joypad you will see there are 12. Count the number of pins on the pad and you will see there are only nine. Bearing in mind there has to be an earth you have to resort to some tricks to squeeze out all the signals.

Tricky business

A quick unscrewing of the back of this gadget revealed a small black bump on the printed circuit board – a surface-mounted carrierless integrated circuit. The presence of electrolytic decoupling capacitors gave me the power supply pins and polarity, so I fired it up.

I could trace what all the pins did with my oscilloscope. This showed that all the pins except pin 7 were outputting something when a key was pressed. In fact, that something was a logic zero. So far so good, I thought, that extra pin must be a multiplexing input. Put a logic one on it and you get six pins outputting six switches – this checked out. Now put a logic zero on it and you will get the other six switches, so test that and, well no you don't!

What you do get is that two of the missing buttons appear but the other pins do rather strange things when the original set of switches are pressed. Something more complex must be going on.

Discovering the ins and outs

So if the input will not respond to a simple logic one and zero, I thought, how about feeding it with a constant frequency clock? I dragged out my signal generator and fed in a pulse train. Looking with my oscilloscope something appeared to be happening to the signals on all the outputs when all the buttons were pressed.

It appeared that every so often there was a pulse that was broader than the clock pulse and these changed shape when the buttons were pressed. This meant I could chart which pairs of buttons appeared on which pins – the result is shown in Figure 1 – with the conventional joystick pinout for comparison.

I carefully charted the exact waveform for each pin, counting how many clock pulses were between the broad pulses for each pin and for each press. After quite a time I had them all down and, just as I was finishing, tweaked the signal generator to see the lowest speed at which it would work.

At that instant I was brought up short and stared at the oscilloscope in disbelief. As I changed the frequency, the positions of the broad pulses stayed where they were and more narrow clock pulses appeared between them. All my carefully designed charts were quite useless. There was obviously much more going on here than first met the eye.

Back to the drawing board

It seemed that the broad pulses were appearing every 20mS. Now this is a magic number – it corresponds to 50Hz, the refresh rate of a TV display. Maybe the joypad was only designed to be read every 20mS or less in the time when the TV frame made its retrace.

So I thought it would make sense to try giving the joypad a few pulses every 20mS or so. Well that's not a job for a signal generator, so I tried a double pulse generator. Even that failed, so I wired it up to the computer to act as a clock source. With my Risc PC reduced to the role of a triple pulse generator and looking at the output on an oscilloscope I finally sussed it out.

What you need to do is to give three clock pulses every 20mS then the signals on the lines will tell you which key is pressed. But it is not quite as simple as that, as the joypad's signal lines work in three different ways. Pairs of wires work in the same manner so you can get three different types of signal out of the joypad. These are summarised in Figure 2. At this stage I was thinking: 'What sort of deranged mind would think up something as bizarre as this?'

The next step was to go through these waveforms and work out at what point in the triple clock pulse I could tell the state of each button. At this point I saw what had probably happened and why the system was so complex.

My guess was that this was the final product of the evolution of a design. Originally there were just six buttons and then someone wanted to add another two. When this was done there was a need to add another two but with total compati-

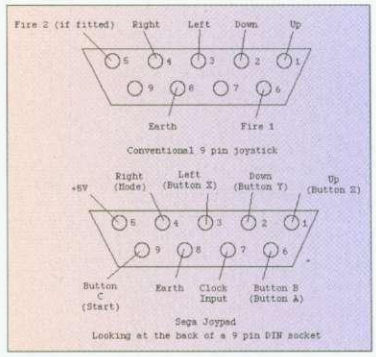
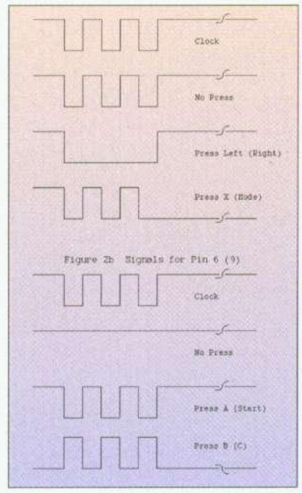


Figure 1

Figure 2



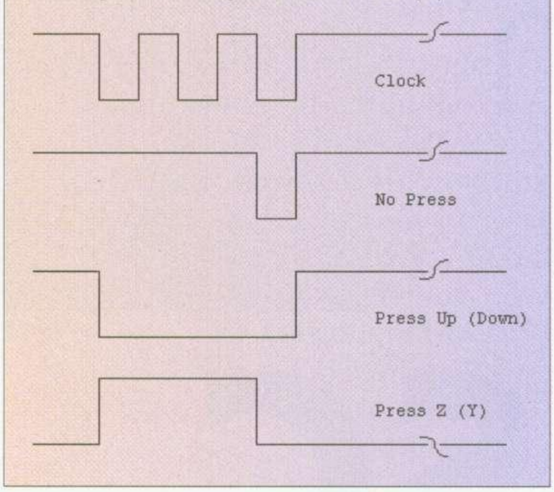


Figure 2c Signals for Pin 1 (2)

bility with the previous design upgrade, so another clock pulse was added. Finally a third extra pair was added and another clock pulse needed. This incremental approach to the design finally resulted in the monster we have today. I found you could tell something about some key on each part of the clock pulse.

Onward and upward

Time to wire it up to the printer port – this is shown in Figure 3 – and to some extent it is quite arbitrary. The wiring was mainly chosen to be straightforward from an insulation displacement plug, and the clock input taken from the strobe output.

If you only have a older output-only printer port you need to use my bidirectional module described in the September 1995 issue of *Acorn User*. However, once you've chosen the wiring any software must take this into account. Note here that the joypad needs a 5 volt supply – I got this from the computer itself. On one of my podules – the MIDI interface I talked about last month – I have a 5 volt socket tapped off the backplane.

To test out the system I wrote a program in BASIC – it's on the cover disc. It generates the clock pulses, reads the printer port and builds up a number where each bit corresponds to a different key. The results, if they are different from the last time round the loop, are displayed in hex and binary. The *FX19 call gives a delay until the next vertical sync pulse.

Mixing and matching

It's all very well being able to read the keypad in BASIC but what is needed is the ability to incorporate it into existing software. Due to the different ways the keyboard can be read it is not possible to derive software to cater for all programs. However, I thought that by intercepting the **OS_Byte** calls that scan the keyboard I should be able to cover a large range of software.

The basic idea is to intercept the **OS_Byte** vector and insert our own routine to scan the joypad whenever the appropriate calls are made. In order not to jam up the whole system, if this routine finds no joypad keys pressed it must then go on to the normal scan routines.

The only problem with this is that the SWI could be called at more that 20mS intervals, in which case the joypad would not respond properly. The solution is to have another routine executed every 20mS or so and put the results in memory. Then the keyboard scan routine just reads the memory locations to see which keys are pressed.

The regular reading of the joypad can be done using the events system that has been present on Acorn computers since the original BBC. With this you can get a routine executed every vertical sync pulse. With the Risc PC some scan modes generate a vertical sync pulse more frequently, so my routine only reads the joypad every other sync pulse. Finally there needs to be some way to program which buttons on the joypad pretend to be which keys on the keyboard.

The proof of the pudding

All this is done in the joypad module on the cover disc – both the source code and the module are shown. Writing a module is not the easiest of exercises as the slightest mistake usually crashes the machine, especially when you are dealing with redirecting vectors.

I find it useful to program the function keys to load, install and test the module. I have left these in the source code which is written in BASIC. The source code also contains the default mappings of the keys so if you want a different set of defaults you can edit this. I have included copious comments so hopefully you can tell what's going on.

The module provides one command – *SegaSet*. This is followed by two numbers: the first is the joypad key number and the second the internal key code it is supposed to mimic. The internal key codes are in the Programmers Reference Manual but you can get the computer to tell you them. This routine is also on the cover disc as *key test*.

If you want a specific set of keys for a program the best bet is to put a sequence of *SegaSet* commands in the *!Run* file. In that way the keys are automatically set. The joypad key numbers and the labels on them are shown in the panel, but make sure you don't assign the same internal keycodes to different joypad keys as this could result in not recognising the second definition.

Trying this out in anger produced mixed results depending on what the programmer used to scan the keys. Unfortunately not all games tested worked and I was especially puzzled to discover that the INKEY function of BASIC was not trapped on this vector, so there's still a bit of work to do on the software side. However, now that the hardware has been cracked it should be all plain sailing from now on.

See you next month.

AU

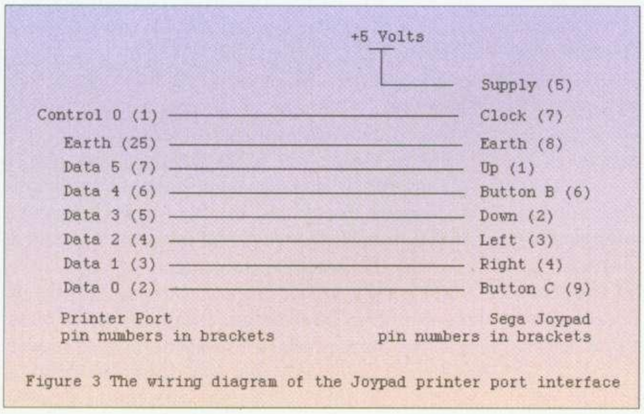


Figure 3 The wiring diagram of the Joypad printer port interface

Joypad key numbers and labels

Joypad	*Number*
A	0
Start	1
Up	2
Down	3
B	4
C	5
Left	6
Right	7
Z	8
Y	9
Mode	10
X	11

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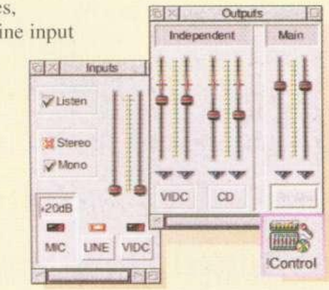


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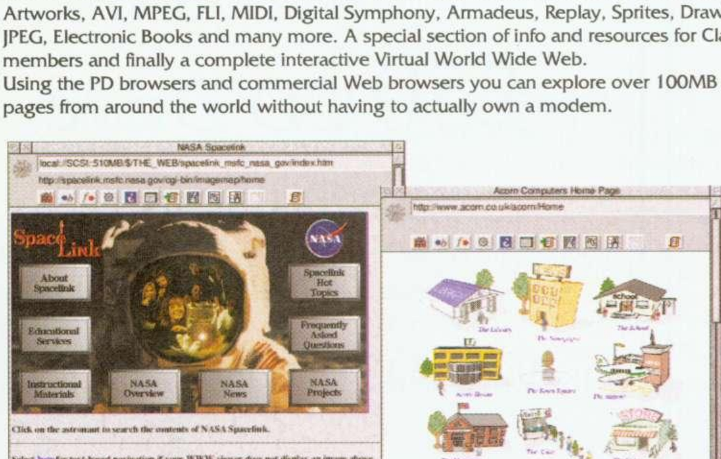
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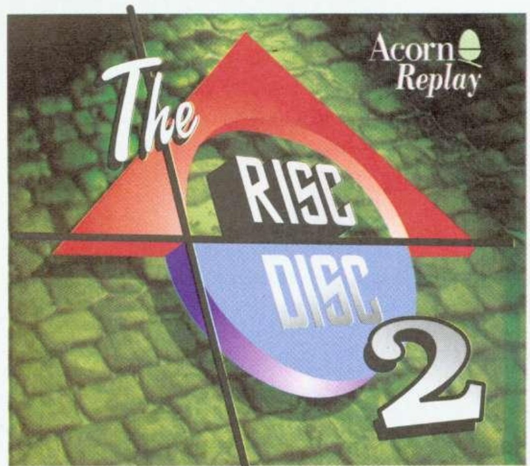
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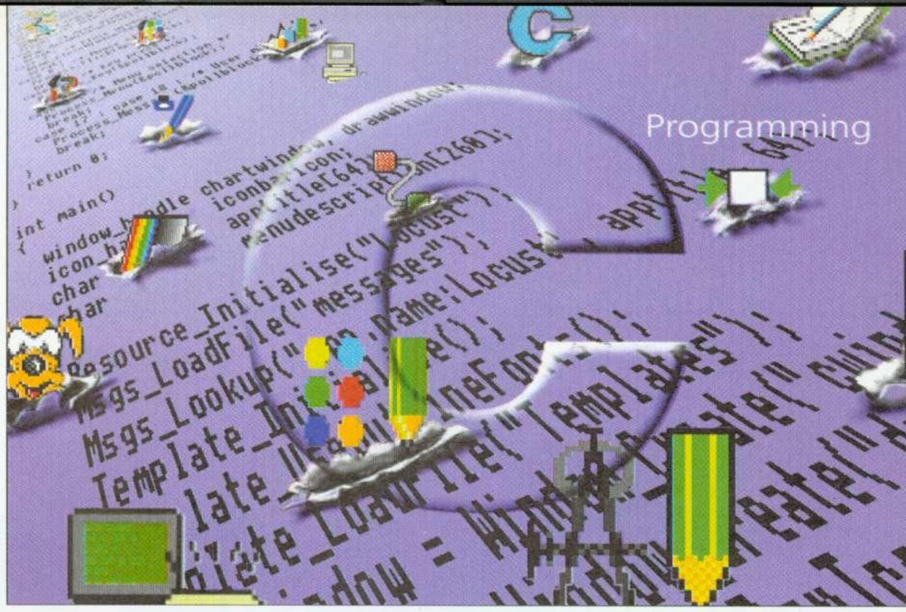
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C for yourself

Steve Mumford takes a closer look at events and messages.

Last month, we looked at the basic procedures behind initialising a WIMP application, using the SWI calls **Wimp_Initialise**, **Wimp_Poll** and **Wimp_CloseDown**. I was hoping to move on to look at how these would fit into a C application; however, due to a few technical difficulties, I've had to leave that for next month. Instead, I'll cover **Wimp_Poll** in a little more detail – due to space restrictions, I was unable to describe it fully last time.

WIMP applications communicate by two main methods – using *events* and *messages*. Events generally cover occurrences arising from user interaction such as requests for opening and closing windows, key presses, menu selections and mouse pointers moving in and out of windows.

There's also a null event that's returned to your application even though nothing has happened – however, in the interests of speed it's best to mask this one out so that the WIMP doesn't waste time communicating with your program when it's got nothing to say. This is done by setting bit 1 of the mask passed in R0 when **Wimp_Poll** is called.

Messages are a subset of events, and embrace a wider range of topics. As well as the rather complex subject of data transfer protocol, other messages that can be passed include **Message_PreQuit**, informing your application that the WIMP is shutting down and allowing it to ask if you wish to save your data.

Message_Quit on the other hand is an order to clean up and cease execution immediately; by this stage, you should have received a **PreQuit** message so there should be no reason for hanging on.

The interactive help system created by Acorn is implemented by the use of messages – there's one that's passed to the appropriate application in order to determine whether it possesses any help text on the subject. If so, the program replies with another message, passing the help text back along with it.

How are these communication systems implemented? Last month, I mentioned that on calling **Wimp_Poll**, you needed to supply a 256-byte data block. On returning, the application is passed an event code that indicates its nature – this allows you to filter out particular events and pass them on to the appropriate handler functions within your code. Each handler then takes a look at the information within the data block and acts upon it accordingly.

Each event returns a different pattern of data; for instance, the **Redraw_Window_Request** event simply returns a window handle at an offset of 0 in the data block whereas **Mouse_Click** responds with the x and y coordinates of the mouse as well as its button state and the identities of the window and icon it was over at the time. The data block for a message is similar to that of an event, but a few extra pieces of information are tacked on, including the task handle of the application that sent the message and a couple of references to trace its history.

There are in fact three types of message:
* **User_Message**
* **User_Message_Recorded** and
* **User_Message_Acknowledge**.

The format of the data blocks is the same in each case, although they differ slightly in their function – the first doesn't require the application to reply to it so if the message is ignored, no further action is taken. If you receive a **Recorded** message and you fail to reply to it for some reason, the originator is returned a copy with its type set to **User_Message_Acknowledge** so that it knows the first transmission was unsuccessful.

Finally, a quick word about **Wimp_PollIdle**. If you've written an application that needs to make use of the null event code but you're performing a task that doesn't need to run at the full speed of the WIMP, it's possible to let your program snooze for a period. It's only bothered by the WIMP again after a specified time, or if a particular event requires its attention. If your application can make use of this – for instance, you might have written a desktop clock which only needs to update once a second – it reduces the workload on the WIMP and avoids any other active programs from being slowed down unnecessarily. AU

Questions & Answers

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Q I have an Acorn A5000 with 4Mb RAM, RISC OS 3.11, an ARM3 processor, a printer connected to my parallel port and a 162Mb hard disc drive. I was thinking about upgrading to a dual-speed CD-ROM drive. Can I fit one internally to my spare IDE port, or do I have to have a parallel port or SCSI interface to connect a CD-ROM drive?

David Wilson
Leicestershire

A You can't fit an internal IDE CD-ROM drive to an A5000, basically because there isn't room in the case. When the A5000 was designed, the only IDE devices expected to be fitted were hard drives. Unfortunately, IDE – unlike SCSI – does not allow long enough cables for an external device to be fitted.

Your two alternatives are, therefore to fit a SCSI interface or to fit a drive to the parallel port. Both Eesox – (01954) 212263 – and Cumana – (01483) 503121 – sell parallel port drives. The Cumana drive has a feed-through printer port on the back of the drive; if you buy the Eesox drive then you will also need a parallel port splitter. On the other hand, the Eesox drive performs slightly better, and Eesox also sells a quad-speed drive.

If you do go for the SCSI route, you should certainly consider a quad-speed drive, rather than a double-speed one. It's becoming the standard for CD-ROM drives, and gives very acceptable performance.

Q When I purchased my Risc PC 600, I could only afford the 14in AKF60 monitor. I am now considering upgrading to a 17in monitor and would like to use the AKF60 on my A3000. I realise that the connectors are different, but would there be any other problems, for instance inability to display certain screen modes?

I also notice that the pin connections on my A3000 suggest that it outputs composite syncs whereas the AKF60 seems to have separate sync inputs; is this a problem which can be overcome?

At present my A3000 is being used with an old Microvitec Cub 1431 (in linear mode but nevertheless somewhat lacking in resolution and mode availability itself). What new modes would be available to me with the AKF60?

My – or should I say, my family's – principle uses for the computers are for word processing (*Impression*), drawing (*Draw+*) and music (*Rhapsody 3*).

S C Winsor
Kenilworth

A The AKF60 monitor should work with the A3000, although older modes such as mode 12 will appear letterboxed. Because the AKF60 is a higher-performance monitor it will certainly be a good idea to buy a VIDC enhancer to increase the clock rate of the VIDC to 36MHz, allowing higher resolution screen modes to be displayed, although the monitor will work fine without one.

The A3000 can output separate syncs, so this shouldn't be a problem.

Q I have a Risc PC 600 ABC45 with 18Mb of RAM, PC card, 16-bit sound card, Cumana SCSI II interface, Irlam 24i16 card, also an Acorn MEU interface with CD-ROM drive and Syquest 105Mb removable hard disc drive.

At Acorn World I was given an update to the firmware of the SCSI II card; this cured the problem I was having of it not recognising when the Syquest drive was empty or the MEU was switched off when running under RISC OS.

I had been having trouble running the CD-ROMs given away with *PCW* magazine using the original PC card software. I found that one of the problems was the PC sound drivers I had bought; when these were removed the visual part of the CD-ROM ran OK but with no sound.

I then installed the *PCx86* software update for the PC card, which enabled the sound OK, but when I tried using the *PCx86* software to set up my Syquest drive as a second DOS hard drive, I found I got an error message from the PC card software:

```
HardDrive 1 (direct SCSI) could not
be accessed
```

Eventually I found that by clicking OK then on Eject from the SCSI icon, then resetting the disc, the PC card would boot up, and I was able to access a DOS-formatted Syquest disc. If there is no disc in the drive, the same procedure works and the card boots up without the extra drive.

If the MEU unit is switched off I get the error message and the PC card will not run. I hope that this information will be of some use to someone.

Bill Cutler
Battersea

A It's never a particularly good idea to run a SCSI chain with one part switched off, but otherwise I've no comment on this letter. Does anyone else have any similar experiences, or better solutions?

Q I have been reading Risc Developments' book *Wimp Programming for all* which was reviewed in *Acorn User* a while ago. The book describes the template editor *FormEd*, which I had read previously about in the magazine. On attempting to buy a copy, however, I was told that the application was in the Public Domain, and it is not advertised by any of

the usual software dealers.

I would much appreciate it if you could point me in the direction of a copy, or tell me of any alternatives.

Jonathan Rawle
Kidderminster

A ***FormEd* is sold by Acorn on the RISC OS support disc which should be available from dealers. It is also part of the Acorn Desktop Development Environment, although it has been superseded by the Resource Editor in the latest version, and it is also available in various collections of programming tools.**

There are alternatives; an excellent Freeware utility by Dick Alstein called *TemplEd* is probably the best. This is available from most PD libraries and Bulletin Boards and has a much easier to use interface than *FormEd*.

Another application, *Glazier* by Tim Browse, never got beyond beta release, but is still widely available from Bulletin Boards. Although it is still a little bit buggy, it does have an intuitive user interface and is well worth a look. Both *Glazier* and *TemplEd* are preferable to *FormEd* for designing templates.

Q I have a 4Mb A5000 with a CD-ROM (AIWA ACD-3000) and I need a scanner for work (preferably colour). I have been looking through a few magazines to get the best deal and came across a PC mag. I found that decent scanner are half the price of the Acorn ones. You can get a colour scanner for the same price as the Scanlight 256, and a greyscale scanner for £69.

Will the PC scanners work on my Acorn, and if they do, what programs will I need to get them working? Also, it appears that PCs can get 2400dpi but Acorns only 600dpi from the same scanner, why?

One last thing; got any recommendations for a colour printer between £250 and £350?

Nicholas Brett
Chigwell

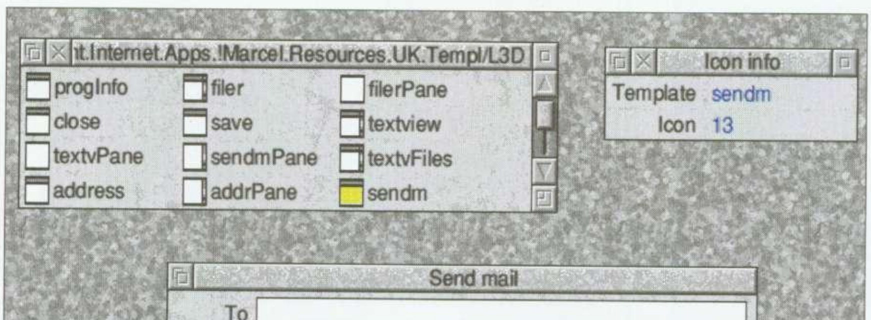
A PC scanners won't work with Acorns, because the interface is completely different. Many 'Acorn scanners' are actually PC scanners with a specially designed interface, which is more expensive because it sells in far fewer numbers.

What about the Atomwide ISAdaptor? Will this allow you to use PC scanners on the Acorn? Well, yes, up to a point. It will certainly be able to physically plug into the machine, and you will be able to use it using, say, a PC co-processor in a Risc PC. However, to access the scanner from RISC OS will require specially-written driver software, which doesn't as yet exist. Nonetheless, scanner driver software is probably one of the first things that will be written for the ISAdaptor, because there is a clear market.

Of course, the ISAdaptor itself costs a couple of hundred pounds, so to use this just to attach a scanner does not itself make financial sense.

Any particular scanner will have a fixed hardware scanning resolution; however, the resolution can be enhanced by software interpolation to an apparent resolution of up to four times the hardware resolution. Most Acorn software can do this too, though – it depends upon the scanner driver.

As for a colour printer; Integrex, Hewlett Packard and Canon all do printers in the price range that you're after. Probably the best of these is the Canon BJC-4000, if only because of Canon's practice of keeping the black, magenta, cyan and yellow ink cartridges separate.



The Freeware template editor *TemplEd* in action.

Q I am interested in finding out about portable Acorn computers and am wondering if you could give me some advice about a fairly cheap pocket computer that is compatible with an Acorn A4000. I don't really know anything about Pocket Books or what the differences are between the actual Acorn Pocket Book and the Psion equivalent, probably because I haven't seen an Acorn one and have only had about a thirty second go with a Psion in John Lewis.

I don't know whether it is worth buying either but it would be rather nice to be able to do work while out and about and edit it/print it out on my A4000. What I am really saying is please could you give me some details and prices of pocket computers.

Alexis
via the Internet

A The Acorn Pocket Book II is pretty much a re-badged Psion 3a. Some of the applications in ROM are different, and there are some cosmetic changes to the casing, but otherwise it's the same machine. Certainly, if it will run on the Psion 3a it will run on the Pocket Book II – the processors and operating system are identical.

In order to transfer files between the Pocket Book and the A4000 you will need an A-Link – a cable which connects the Pocket Book to the serial port of your machine. Obviously the Pocket Book does not run the same software that the A4000 does, but it is possible to transfer files in a common format: plain text, RTF, CSV or Lotus 123. If you are going to be using the A-Link heavily then I would also recommend that you buy a mains adaptor for the Pocket Book, as using the link can put quite a strain on the batteries.

Prices are as follows:
Pocket Book II 256K: £205 + VAT
Pocket Book II 1Mb: £285 + VAT
A-Link: £42.51 + VAT
Mains adaptor: £12.72 + VAT AU

picture book 2



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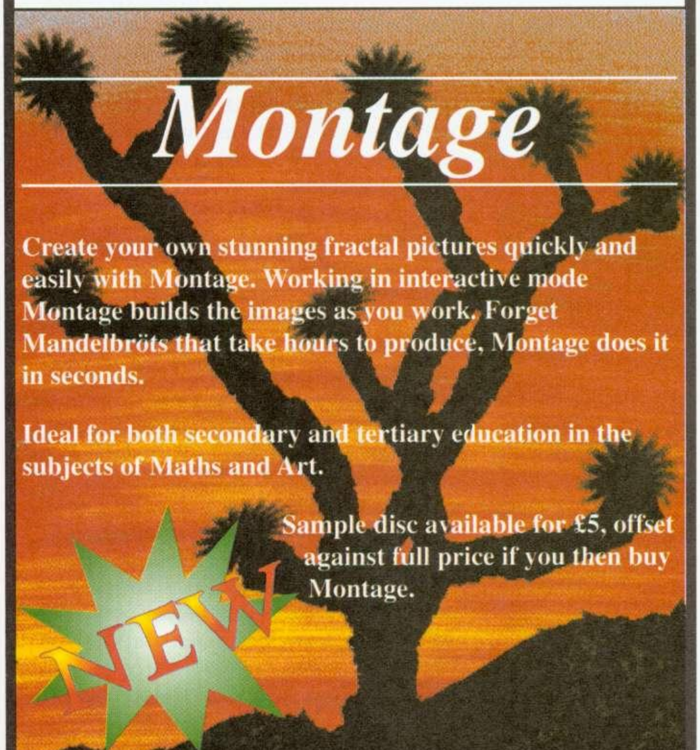
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Acorn Customer hotline

Essential information for Acorn users, compiled by Dave Walker of Acorn Customer Services exclusively for Acorn User.

What is !SysMerge and why should I use it?

!Sysmerge is the application which simplifies the installation of new relocatable modules in !System, and ensures that new modules supplied with applications are installed in the right directory; a look inside the !System application, especially on a Risc PC, will verify the presence of several *Modules* directories, each applicable to one or more versions of RISC OS. *!SysMerge* ensures that relevant versions of modules are placed and pathed correctly, and that datestamps are preserved.

Sometimes, when merging *!Systems* using *!SysMerge*, the merge does not work correctly; as *!SysMerge* does not use the *force* option when updating files, this failure is often due to a file in the master *!System* having been manually updated since the software containing the to-be-merged *!System* was released. The solution to this problem is to change the datestamps on the to-be-merged *!System* to the current date and time (either by loading into *Edit* and re-saving or by using ***STAMP**) and then using *!SysMerge* again.

What's this DCI business?

DCI refers to the Driver Control Interface; this is the interface standard to the raw controller software which drives network interface cards. The interface is used by applications such as *!Internet* and *!BootNet*.

The incremental versions of the DCI system have been in use for some time; Acorn's Release 1 TCP/IP used the DCI1 standard, Release 2 is DCI2 and the current freely-distributable stack (downloadable as ftp.acorn.co.uk:/pub/riscos/releases/networking/DCI4/*) is DCI4. You still need TCP/IP Release 2 to get the telnet client and either Release 2 or *OmniClient* to obtain NFS client capability. DCI3 was an internal development-only version, which was never released.

The DCI2 and DCI4 stacks have an interface which is based strongly on the Berkeley socket layer, developed for BSD UNIX; the DCI2 version of the relevant C libraries are now available without charge from ftp.acorn.co.uk as /pub/riscos/releases/networking/tcpip/sockets.arc

Note that these libraries are for use only by experienced network programmers, and are released without support or warranty.

Acorn Customer Services
Acorn Computers Ltd
Acorn House, Vision Park,
Histon, Cambridge CB4 4AE
E-mail: customer.services@acorn.co.uk

Inside CDFS, Part 1

Probably the most popular programming query for the last few months has involved a request for details of the SWI interface to CDFS, particularly those SWIs related to Red Book (CD audio) discs. All CDFS audio SWIs conform to the RISC OS standard insofar as:

- any registers not explicitly defined as result parameters are preserved
- the N, Z and C flags are preserved
- errors are indicated by setting V and returning with R0 pointing at an error block. If the bit 17 clear version is called, control passes to the error handler instead
- the SWI cannot be called from the background unless specifically documented
- all SWIs may be called from interrupt and event routines

but:

- No CDFSDriver SWIs preserve the interrupt state
- No CDFSDriver SWIs are re-entrant

Before you can access a CD-ROM using any of the CDFSDriver SWIs, you need to set up a CDFS control block. When you call any of the SWIs, you pass a pointer to the block in R7.

A CDFS control block describes a physical device to the CDFS_Driver module, so it can use the correct routines. Consequently there must be one block for each CD ROM drive to be accessed. Once set up, the block remains valid until the next CDFS initialisation. CDFS may alter a block's contents, but you must not do so yourself, nor must you save a block and use it in another session.

Each CDFS control block is five words long. To construct a block, you must:

1. Allocate memory for the block.
2. Call **CDFS_ConvertDrivetoDevice** to convert that drive's logical number to a physical drive number.
3. Copy the returned physical drive number into the block as below.

All bits of the control block not mentioned above must be initialised to zero. The whole process can be done as:

word0 = (drive_number AND 8)
word1 = (drive_number AND &18)>3
word2 = (drive_number AND &E0)>5
word3 = (drive_number AND &FF00)>8
word4 = (drive_number AND &FFFF0000)>16

Latest free software updates

For those of you who have a CD-ROM drive, you'll find this software on this issue's cover CD; for those without, it's on ftp.acorn.co.uk and mirror sites:

Internet 4.07: Latest version of the DCI4 *!Internet*, *!Bootnet* and Ethernet card drivers

Printers 1.52 Release 3: Latest *!Printers*, now with more Printer Definition Files (for HP DeskJet 340, Epson LX300 and David Pilling's *ArcFax*; there are also improved drivers for many printers in the Canon BJ range)

New Application Notes on networking theory and adding extra hard discs. AU

*info

Start the New Year with a selection of the brightest and best from Dave Lawrence and Dave Acton.

Quote . . . unquote

Author: David Llewellyn-Jones

This is very handy little module from David Llewellyn-Jones. It sits in the background and cunningly converts quote characters typed into any application into their correctly *sexed* counterparts.

To use the module, you can either use it in conjunction with David's neat front-end or, if you'd like to use it all the time, you can copy the module *SmartQuotes* out of the *Quotes* application into an appropriate place in your boot sequence.

The desktop front-end has the added feature of a small window showing the various quotes and allowing these to be inserted into your text by clicking on them. This is accessed by Adjust-clicking on the icon, or via the menu. If you do not make use of the front-end, you can use the commands ***Quotes On** and ***Quotes Off** to enable and disable the conversion.



As you might expect, the module cannot always work out exactly which flavour of quote you meant, so occasionally you will have to go back and correct them. For this the insertion window is particular useful if you can't remember exactly whether you need Alt-144 or Alt-145.

Finally, the module only works in the desktop – press F12 to reach the command line and the module will de-activate itself.

● *In David's original help file he said that he couldn't work out how to get the !Run file automatically to load the SmartQuotes module. This is because it is a module task and therefore does not quit until the task quits and so the rest of the Obey file is not executed. To get round this problem, we loaded the module with a call to WimpTask. This is executed when control returns to the desktop – effectively queuing the command.*

Just the beat

Author: Barnaby Rowe

This is not an advertising campaign on behalf of Tate and Lyle, but the second of our Digital Symphony tunes from Barnaby Rowe. This is a more techno-orientated piece of music, which, when blasted through an external amplifier and a pair of Hotblack Desatio speakers, would not be out of place at one of these new fangled so-called *discotheques* which seem to be all the rage.

Jellystarfish

Author: Jan Vlietinck

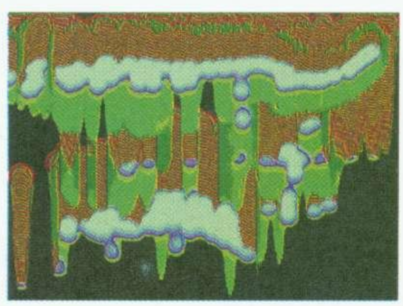
There's not much wrong with a good Vibe every now and again, so here are a couple of classic Jan-isms. Both simulate blobs of jelly. Jelly is just a plain old circular blob, but *JellyStar* is a far more interesting star shape.

To see the jellyness of these shapes, just *grab* a point on the circumference with the mouse, drag it a short distance and release it. The shape will oscillate most satisfactorily. JellyStar is particularly reminiscent of looking through slightly turbulent water at a rare white-edged black starfish sitting on a black rock.

Slime machine

Author: Phil Norman

You must know us by now – Phil Norman certainly does, as he's sent us: "An ARM-coded demonstration of the flow of green slime down a slightly-inclined slope." How could we resist! *GUC* (explanations later) is a Risc PC-only program because of its use of an extended colour palette. No doubt someone will be so annoyed by this that they'll send us a version suitable for older machines. It works in *X480 Y352 G256* mode – the smallest, so it can run as fast as possible.



It is called *GUC* after the Grand Union Canal which runs through Birmingham, and what you see on the screen is about the same consistency as the canal. And no, we don't want to see a program called Hudson.

Secret surface

Author: Jan Vlietinck

Those of you who rummaged through the *INFO directory of the December '95 cover disc (detention for anyone who didn't) will have encountered a *secret* demo – *3DSurf* by Jan Vlietinck. Apologies are due to Jan for omitting the text but not the program. If it was merely our usual drivel, we would not bother you with such a trifling omission, but since Jan offered some light on how his splendid 3D antics worked, we must put matters right and print the missing text...

3DSurf is (well, was...) not one but three examples of 3D surface wizardry. Press Escape to exit from each section, and move on to the next.

'FireBall shows a spinning ball, leaving a trail of fire as it moves in 3D. The animation is achieved with two identical objects: one is the drawing object, the second follows exactly the same path but trails N steps behind and clears pixels drawn by the first object. The demo runs in a 16-colour mode with palette cycling being used to simulate the fire extinction. The palette is cycled so that the currently plotted object always has the brightest colour. An important trick to avoid mistakenly deleting pixels is to ensure that a pixel to be cleared has the same value given by the drawing object N instances ago.

'Transluc shows what can be done with *emulated* bit-plane graphics. Unlike the Arc some computers use a separate memory bank for each bit of a pixel. The video hardware then overlays all those planes on to the monitor. The benefit of such a system is that is allows very easy for parallax and transparent or translucent effects.

'On the Arc such a system can be emulated by setting only a particular bit of a pixel. For example, in Mode 13 each bit of a pixel's byte corresponds to a particular bit plane. To do this, more work has to be done than just setting the whole pixel to a particular colour. First the pixel value has to be loaded and with an ORR operation relevant bits can be set. Then the pixel value has to be stored again.

'For the 3D object two bitplanes are used. The surface of the object consists of a *checkboard* of triangles with two colours. The front triangles are drawn in one bitplane, while the triangles at the back are drawn in another. By reprogramming the palette, the back and the front can be blended resulting in a *translucent* object.

'Similarly the background is drawn as a bi-colour checkboard now in a third bitplane. The object can be moved with the mouse and zooming is done with the left and right buttons.

'*Zeppelin* is just a polygon sphere with text on it bouncing around. The sphere is illuminated with a simple frontal light source. Also the illumination varies with the depth of the object.'

By the way, you can change the text on the *Zeppelin* by altering the DATA in the program – it is just read in as a bitmap.

Age-old problem

Author: James Shepherd

The problem in this case is to present the reading ages of a group of children in the clearest and most useful manner. The solution comes in the form of *ReadAge* by James Shepherd. Teachers everywhere should benefit from the program which aids the assessment of reading ages by producing a drawfile containing a graph of reading age minus chronological age.

ReadAge takes the names, dates of birth, and two reading ages of up to 62 children at a time. You can either type in the data using the window provided, using the editing and sorting features available, or drag in a CSV file from another application. An example is on the disc.

After input, the data can be saved as a textfile, CSVfile, or a drawfile. The drawfile has a graph showing whether each child is ahead or behind with their reading. Clicking on the *ReadAge* icon will open the main window, allowing data entry. One record is shown at a time. To move to another record click on < or >.

Clicking on the R A 1 or Test 1 icons displays the chronological age of the current pupil at the time of the first test. The R A 2 and Test 2 icons perform similar functions for the second test. A simple menu is provided. This includes a user-definable auto-save facility, which will save your data (suffixed with '_back') at regular intervals. There is also a Wipe All option to clear all records.

Records may be added before or after the current one by using a pop-up menu from the + icon. Click on – to delete a record. Again, a pop-up menu is provided so you can delete or just clear the record.

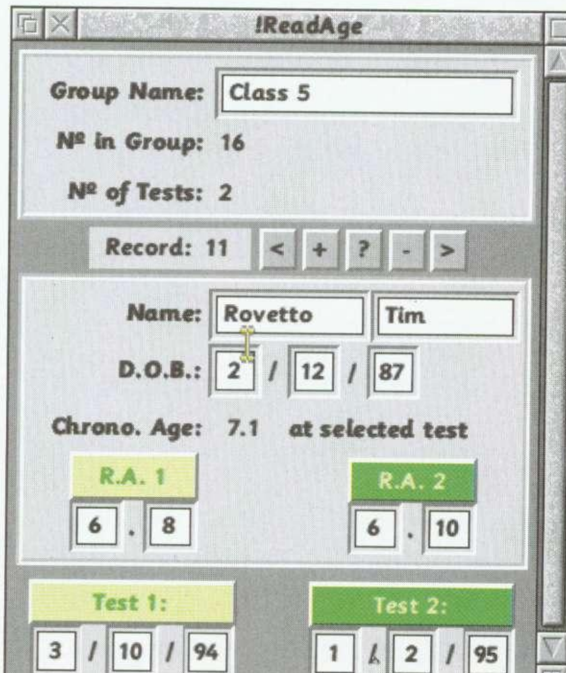
Click on ? to bring up a menu. From this you may open the Find window. This allows you to search through the records for a particular name, or a record if you know the number. Case is not important. The Sort window is also available from this menu. The records can be sorted in a number of ways. Name (1) is surname and Name (2) forename. RA1, RA2 and Chr. Age put the records in order by the associated age. These latter sorts put the weakest pupils first.

Data may be saved as a CSV file, text or as a graph in the form of a drawfile. You can drag the save icon directly to *!Draw* for an immediate graphical representation. Note that the graph may not necessarily be immediately suitable for printing out from *!Draw* – scale and move as required.

The 'save as text' option is best used in conjunction with the sorting options to provide a class list. There are icons to select what to include in the textfile. Age today uses the computer's internal clock to calculate the child's exact current age.

The textfile can have tabs as separators, which gives better results if you are going to use a DTP or WP package to print out the list. Using commas to separate the values provides a way of producing a more detailed CSV file for use with a spreadsheet.

James' program, aside from being a useful tool for teachers, is also a good example of what can be done by using methods pioneered in *INFO over the years. He credits Tim Howard for icon dragging, Graham Crow for sorting and Michael Attenborough for *Draw* file creation.



Ooops

Peter Borcherds

We would like to apologise for the late arrival of the 9.26 to Alpha Centauri. This was due to a numerical error in the December '95 *INFO. If your particle accelerator blew up, or your spacecraft went astray by a light year or two as a result of using one of the dodgy values in our *Constants* application, Peter Borcherds of the School of Physics and Space Research at the University of Birmingham can shed some light on the problem.

'The program gives the values in the standard SI units, and also in the older cgs units. In many cases the values in the two systems differ by a few powers of 10 – e.g. 1 meter is 10^2 centimetres. However in the case of electrical (and magnetic) units, the relationship is more complicated.

'In the cgs system of units there were two sets of such units, electrostatic and electromagnetic. The reason for this is historical. In the early 19th century the pioneers who were developing electricity and magnetism defined a system of electrical units, esu, based upon electrostatic phenomena, and a system of magnetic units, emu, based upon permanent magnets.

'Later workers used the same magnetic units when working with electromagnets. In each of these systems there were values for such quantities as electric current and electric potential (voltage). It was found that the ratio of the values of certain units, e.g. the units for electric charge, in the two systems was a velocity, approximately equal to 3 E10 cm/s. This was recognised as being equal to the velocity of light.

'This observation helped James Clerk Maxwell to realise that light is an electromagnetic wave, and to his development of the theory of electromagnetism. Indirectly this observation underlies the development of much of modern science and technology, such as radio.

'In terms of SI units, the esu unit of potential (the statvolt) is about 300 volts, and the emu unit (the abvolt) is 1 E-8 volts (exactly). The emu of current (the abamp) is 10 amps (exactly). The values of other related units can be found from these figures. In particular, in esu, the value of the electronic charge is 4.803 2068 E-10 esu or statcoulombs, not the value shown in the illustration in *INFO. The velocity of light (in vacuo) is now defined as a fundamental constant, with the value 299 792 458 m/s.

'There is yet a further complication in the relationship of a few units, such as magnetic field strength. In SI, this is measured in amperes per meter, in the cgs system the emu is the oersted, which is equal to 79.5= 77 A/m. This number is equal to 1000/(4 PI). The quantity (4 PI) arises because the surface area of a sphere of radius R is 4 pi R^2.

'To explain how this is related to the two systems of units would take more space than would be justified here, but is covered in standard undergraduate texts on electromagnetism.

'A comprehensive list of the values of units and conversion factors is given in A Physicists Desk reference, published by the American Institute of Physics (ISBN 88318-610-1).'

● *And thanks to Peter for giving us the opportunity to feature words like oersted and statcoulombs in these humble pages.*

Spinning Jenny

Author: Jan Vlietinck

Well, we're not sure what her name is, but the female star of Jan Vlietinck's latest demo is probably feeling a bit woozy after what she's been through. Jan says that 'This one is all about checkerboard bitmap zoom-rotation.' And he's right.

In fact, five versions of the technique are demonstrated, each slightly faster than the last, with the inevitable trade-off between speed and accuracy.

'If you consider an N by N bitmap B(u,v),' says Jan, 'for each pixel P (x,y) on the screen the following lookup operation has to be performed:

P(x,y)=colour B((r*cos(h)*x-r*sin(h)*y) mod N, (r*sin(h)*x+r*cos(h)*y) mod N)

where h is the angle of rotation and r is the zoom factor. The art of course is doing this complex calculation in a fast manner. Courtesy to Frederic Elisei for some of his original ideas!

'The first version does a lookup for each pixel. The second does this only for alternating odd-even line fields (i.e. interlacing). The third and fourth versions respectively copy odd rows and columns from the previous row or column. The last version combines the last two, resulting in 2x2 screen blocks, effectively reducing lookup to one fourth of the original.'



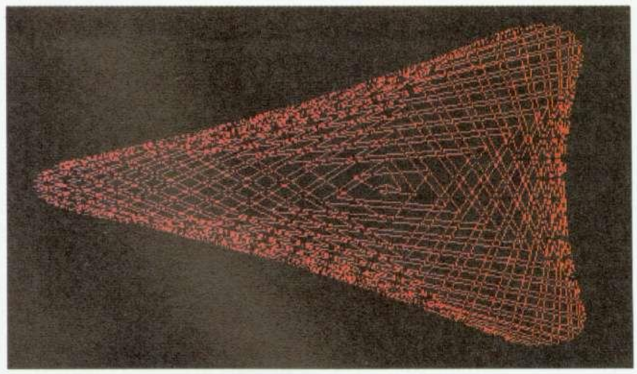
Maur than meets the eye

Author: Roddy Graham

Here is a submission to our sadly neglected one-line department. With the disappearance of the yellow pages and the arrival of the cover disc, the fact that a graphical doodle fits in 250-odd bytes of BASIC is rather lost. Oh well, at least people like Roddy Graham are perpetuating the legend ...

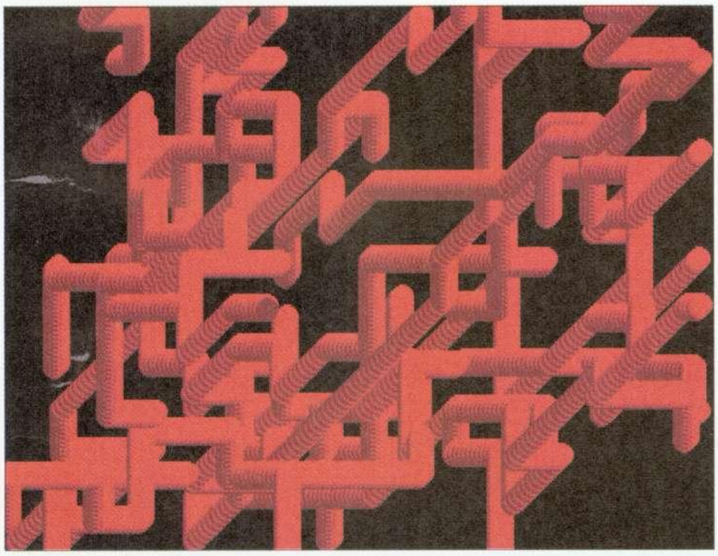
'Back in 1988 the Guardian *Futures* section published an article about a graphics hack called the Maurer Rose, after the person who discovered it. The article included an algorithm for generating the Rose – you wouldn't get an algorithm in the Guardian these days. You young folks have it easy with yer *Online* and yer bloomin' Internet – I converted it into BASIC, doodled with it for a bit, and forgot about it for seven years. Now I've found it again, I thought you might like to see it.'

How right you were Roddy.



Plumb crazy

Author: M. Simpson



Mr M. Simpson's small ditty *Pipeworks*, shows how a very simply idea can produce a quite striking result. The program builds up a network of pipes reminiscent of the outside of the Pompidou centre in Paris. After a while, the screen does become rather cluttered, but for a few seconds before that, the effect is remarkably effective.

Track of tracks

Author: Jim Redfarn

Reader Jim Redfarn was surprised to hear that we were unable to play Mr Adamson's recently featured MIDI composition.

He points out the splendid *Rhapsody 3* can give a fine rendition of said pieces by altering the settings to play using internal voices. Many thanks to Jim for bringing this to our attention, and also for his own *Rhapsody* version of Honky Tonk Train Blues which you will find on the cover disc.

Compatibility table

Program	RISC OS 2	RISC OS3.1	RISC OS 3.5/3.6
Maur	Yes	Yes	Yes
Quotes	No	Yes	Yes
GUC	No	No	Yes
ReadAge	Yes	Yes	Yes
Pipeworks	Yes	Yes	Yes
Jelly	Yes	Yes	Yes
Roto	No	Yes	Yes

*QUIT

All your programs be they humble one-liners or somewhat heftier applications are very welcome, as are any hints and tips. Send to:

*INFO, Acorn User, IDG Media, Media House, Adlington Park, Macclesfield SK10 4NP

or e-mail us (including your real address please) at: starinfo@idg.co.uk

You needn't include a letter but do please put your name, address and program title on every disc and include a text file containing at least your name, address, disc contents and program details. An SAE will ensure your discs are returned and any other instructions, diagrams, saved screens and so on will also be much appreciated by ourselves and other readers.

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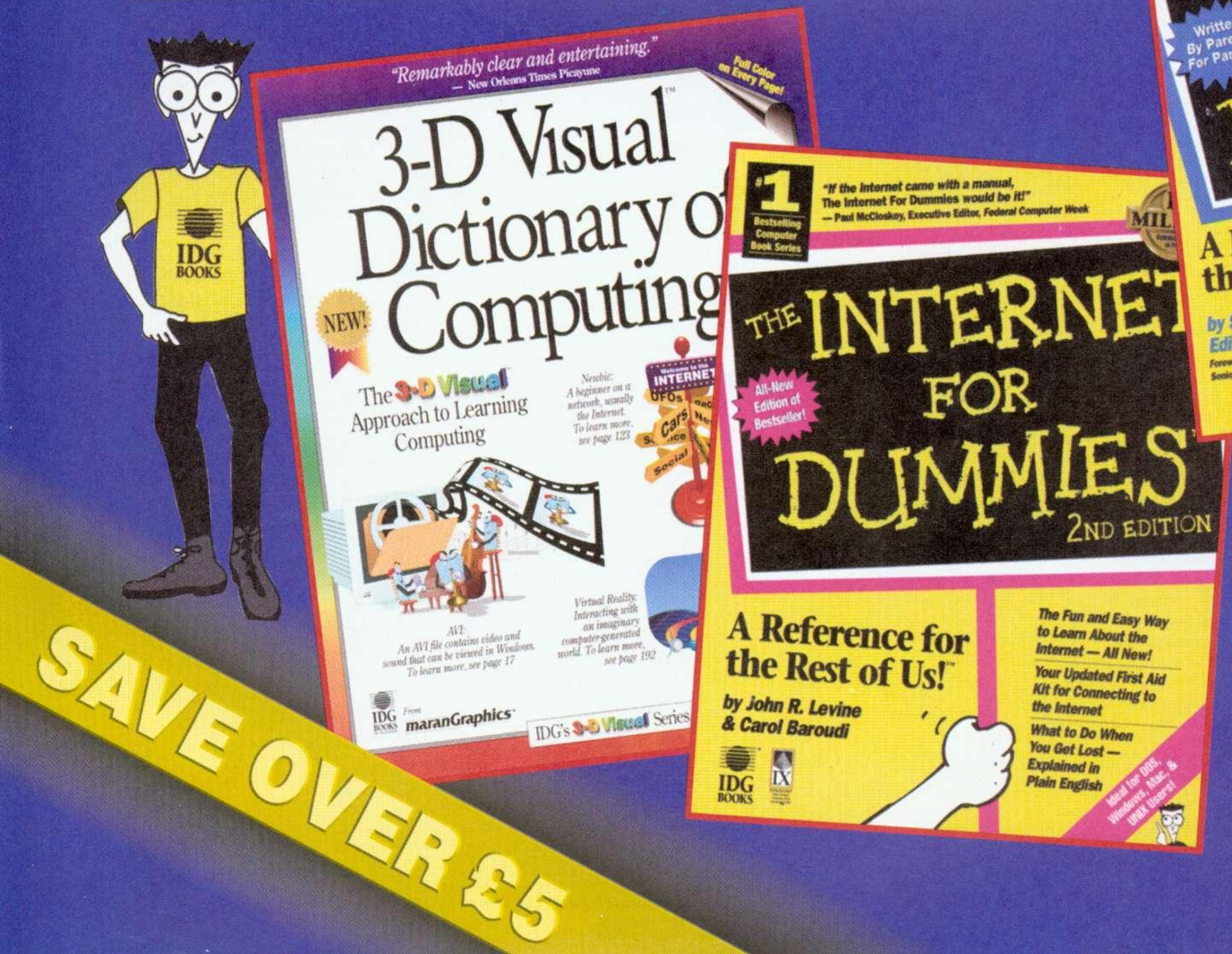
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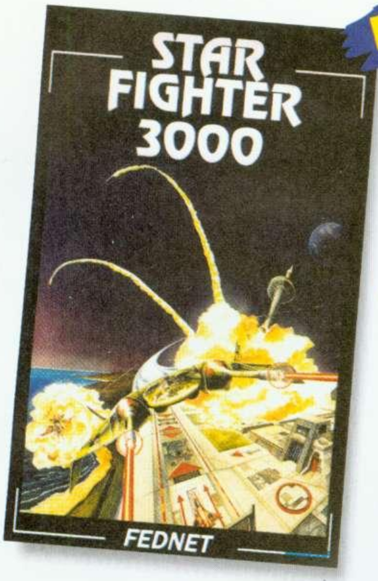
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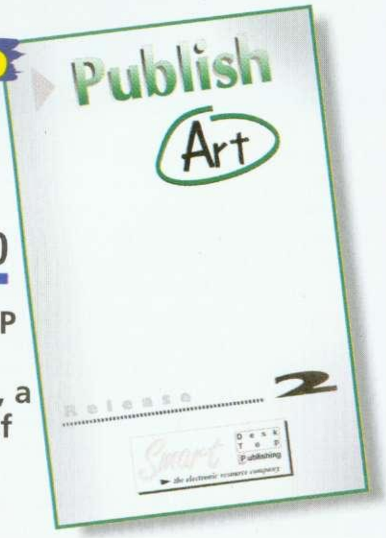
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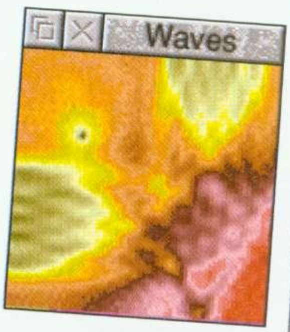
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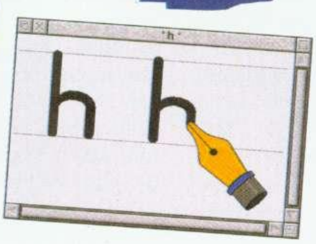
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The Regan files

Jim Daniels



REGAN

Jim Daniels started Pineapple over ten years ago. You can tell it's one of the older companies because of its name – it hails from an age where the fashion was still to call your computer company after a fruit: Apple, Apricot, Tangerine and so on. Like many Acorn companies, Pineapple is a family affair, run by Jim with his wife Barbara, and now his son Michael.

The familiar pattern in family-run Acorn companies is that of the parents providing financial support and business acumen for whizz-kid sons, but Jim is a trained electronic engineer in his own right. He worked at the BBC, and was there when Ceefax started:

'One of the things I designed was the first set-top box, which was the first commercially available teletext decoder. This was before microprocessors had been invented, really. Until I got my first computer – a Commodore Pet – I'd always assumed that whatever you could do with microprocessors you could do better with hardware. Then when the BBC Micro came along, which was also a 6502 machine, I thought "I wonder if I can make any money out of this?"

'The first program I wrote on the BBC Micro was in fact a copy of an arcade game called *Moon Crester*. I used to get some very funny looks when I went down the arcade and took photos of the screen so that I could get the look right. Superior Software bought it, changed to *Star Striker*, and that brought in royalties.'

Jim's next project, which he'd been working on for some time, was a drawing program called *Diagram* which could draw shapes larger than the screen, scrolling the whole picture. This program was developed for doing big system diagrams on, but none of the Acorn software companies were interested in selling it.

'Undeterred, and convinced that there *was* a market for the program, Jim decided to found Pineapple Software to sell *Diagram*. *Diagram* sold well, and eventually led to the PCB autorouting program which was very popular with schools and soon became one of Pineapple Software's best sellers.

'We were then approached by this kid called Alan Glover, who said "I've written this program called *ADFS Utilities* – would you like to sell it?" Now, we used to get a reasonable number of kids coming along with programs that they'd written, asking if we wanted to sell it, and 99 out of 100 of these aren't any good. But we liked *ADFS Utilities*, and we marketed it and it sold a few copies, but not too many because programs like that never do; they're only bought by programmers. But with this, and a few other programs, Pineapple gradually increased its turnover.'

Then the Archimedes came out, and it suddenly occurred to Jim that this would be an excellent machine for video digitising. As an engineer at the BBC, Jim had designed a lot of in-house BBC equipment, so building a video digitiser for the Arc wasn't much of a problem. Jim also ported *Diagram* to what was then Arthur, but admits that sofware writing on the Archimedes was harder than on the BBC Micro.

'The Arc's a much more complex machine, so it's much more difficult for one person to write really big applications – it was still possible, but most of the big projects were tackled by programming teams like at Computer Concepts. Then Alan Glover contacted us to offer us some software he'd been putting together in-house at Acorn for removing viruses. I was a little doubtful about whether we could market this – there weren't actually many viruses around at the time on the Arc – but we decided to go for it. We did the virus protection scheme as a subscription service because the program would need constantly updating.'

'We've always tried to keep the product range as small as possible, mainly because you can provide very good backup for people. We sold all the things that we found that we used ourselves.'

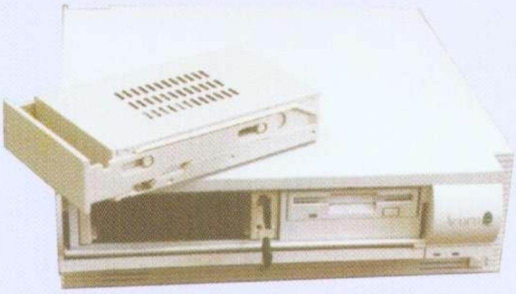
Pineapple's range of products has always been fairly eclectic but this tends to reflect what Jim himself finds useful.

'We've always tried to keep the product range as small as possible, mainly because you can provide very good backup for people. We sold all the things that we found that we used ourselves – we started selling the colour scanners because we used one to produce our adverts and realised what a brilliant device it was.'

A company that concentrates on selling the products that it finds useful; it's easy to see why Pineapple has lasted so well.

David Matthewman AU

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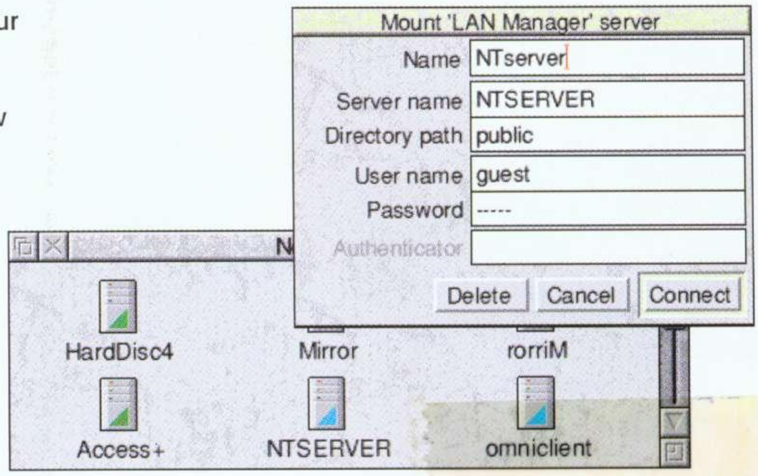
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... or all the way around the world

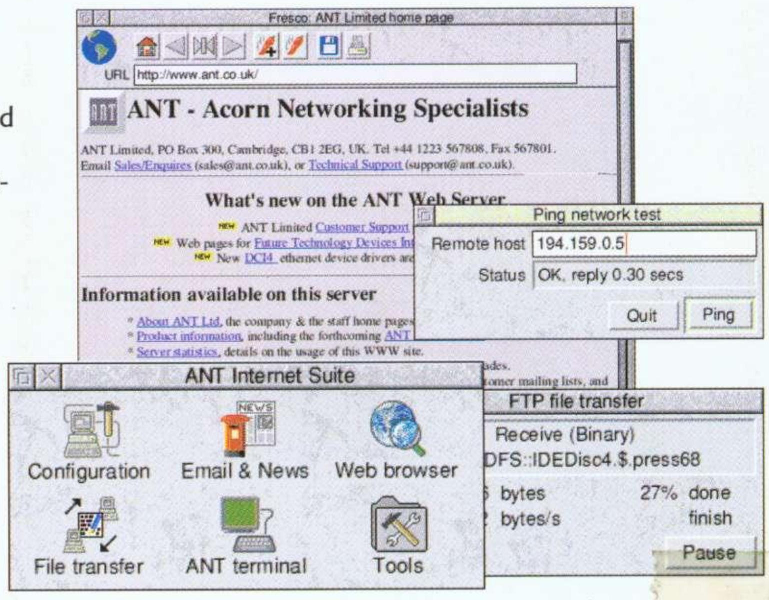
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